40p

Printout No 8

Fortnightly September 29 – October 12 1983

LOAD RUNNER

THE GALAXY'S FIRST COMPUTER COMIC

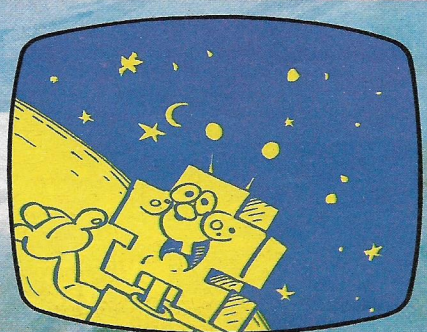
LOAD RUNNER AND PETRA ARE TWO HUMANS STRANDED IN A MALEVOLENT COMPUTER-CONTROLLED GAME WORLD. TAKING TO THE AIR IN AN OLD BI-PLANE, THEY FIND THEMSELVES IN A DOG FIGHT!

LOOK OUT!!

RIGHT. I KNOW WHICH SIDE YOU'RE ON.

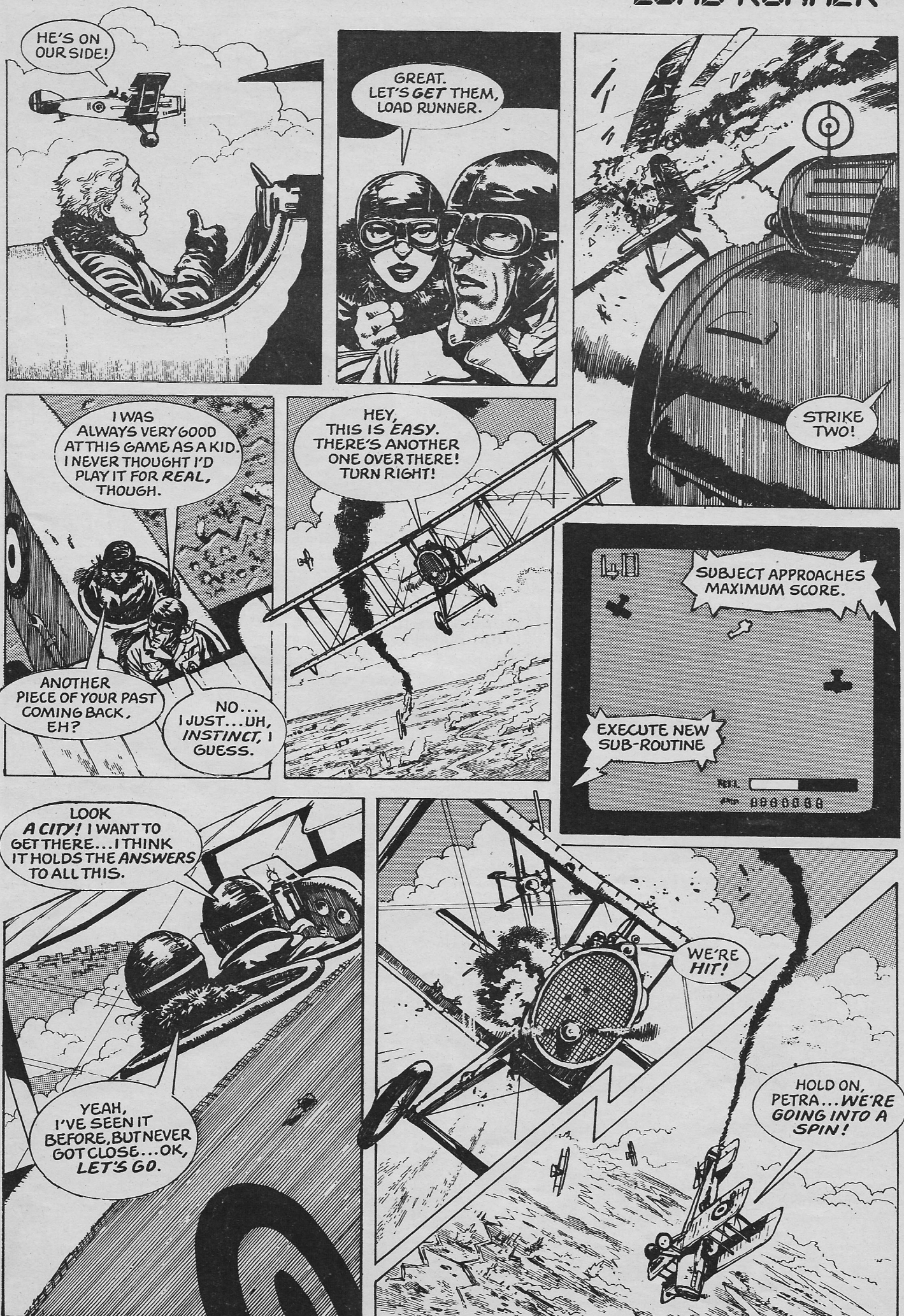
JOIN THE DECODERS

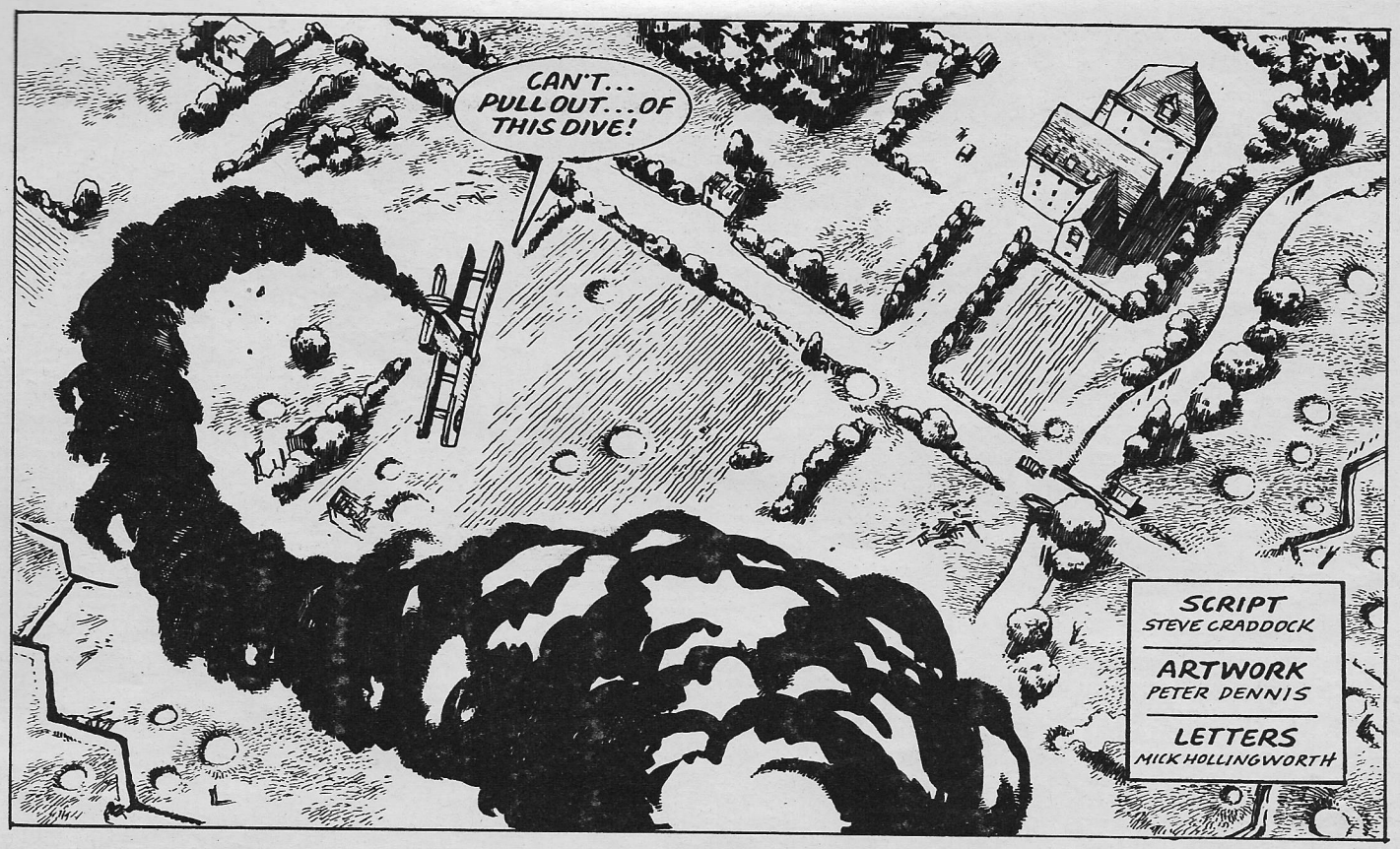
ROM AND RAM AT THE FAIR

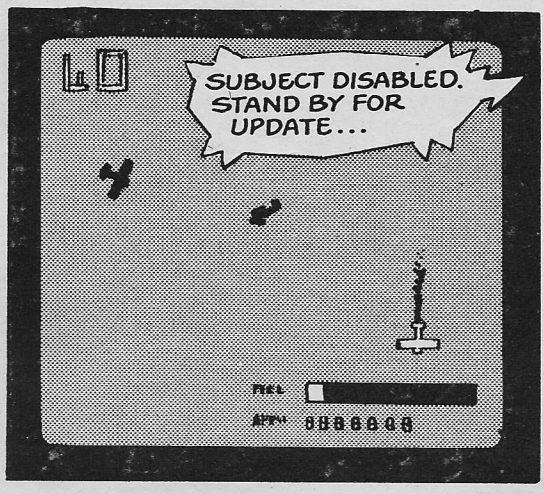


MOTOR RACING MICRO USER

SCORE ONE TO US, PETRA.
10
: GO TO NEW ROUTINE.
INPUT NEW VARIABLE.
FULL
OVER THERE, LOAD RUNNER— HEADING RIGHT FOR US!
IT'S HIM! THE MAN I SAW BEFORE.
LOAD RUNNER'S ENIGMATIC OPPONENT FROM THE TERRIFYING CHESS GAME*... BUT WHICH SIDE IS HE ON?
BRAKKA BRAKKA
HE'S ON THE OTHER SIDE!
* AS DISPLAYED IN PRINTOUTS 3 AND 4.
WHEN I SAW HIM IN THE CHESS GAME, I THOUGHT HE WAS FORCED TO PARTICIPATE, LIKE MYSELF... I THOUGHT I WASN'T ALONE IN THIS NIGHTMARE.
HOLD ON. LOOK!
HE WASN'T FIRING AT US... THERE WAS SOMEONE ON OUR TAIL!


HE'S ON OUR SIDE!
GREAT. LET'S GET THEM, LOAD RUNNER.
STRIKE TWO!
I WAS ALWAYS VERY GOOD AT THIS GAME AS A KID. I NEVER THOUGHT I'D PLAY IT FOR REAL, THOUGH.
HEY, THIS IS EASY. THERE'S ANOTHER ONE OVER THERE! TURN RIGHT!
ANOTHER PIECE OF YOUR PAST COMING BACK, EH?
NO... I JUST... UH, INSTINCT, I GUESS.
SUBJECT APPROACHES MAXIMUM SCORE.
EXECUTE NEW SUB-ROUTINE
LOOK A CITY! I WANT TO GET THERE... I THINK IT HOLDS THE ANSWERS TO ALL THIS.
YEAH, I'VE SEEN IT BEFORE, BUT NEVER GOT CLOSE... OK, LET'S GO.
WE'RE HIT!
HOLD ON, PETRA... WE'RE GOING INTO A SPIN!


CAN'T... PULL OUT... OF THIS DIVE!
SCRIPT
STEVE CRADDOCK
ARTWORK
PETER DENNIS
LETTERS
MICK HOLLINGWORTH


SUBJECT DISABLED. STAND BY FOR UPDATE...

DONE IT!... BUT TOO LATE... ..WE'RE GOING TO HIT THAT BUILDING!
WELL, AT LEAST IT MIGHT BREAK OUR...

...FALL!
CRAAASH

...AND THEN THERE WAS SILENCE.
AND IN THE SILENCE, SOMETHING MOVED...
NEXT PRINTOUT = COME INTO MY PARLOUR!

SCHOOL FOR SOFTWARE

AFTER A **SCHOOL SOFTWARE COMPETITION** IS ANNOUNCED TO DEVELOP THE BEST **GAME PROGRAM**, REBEL PUPIL **BEV JEAVONS** HITS ON A WINNING IDEA. **B**UT OTHER PEOPLE ARE OUT TO STOP HER .....

SCRIPT: FRANK HOPKINSON

PHOTOS: HENRY ARDEN

LETTERS: JACK POTTER

WHAT'S UP WITH YOU, THEN?
NOTHING.
YOU HAVEN'T SPOKEN A WORD SINCE YOU CAME IN. THERE'S GOT TO BE SOMETHING.
WHY WON'T YOU BUY ME A COMPUTER?
WE'VE BEEN THROUGH THIS BEFORE, LOVE. WE HAVEN'T GOT THE MONEY, YOU KNOW THAT.
YES, BUT NOW IT'S DIFFERENT. THERE'S A COMPETITION ON AT SCHOOL. IF I HAD MY OWN MICRO I COULD WIN EASILY. THE FIRST PRIZE IS £50.
WHAT'S WRONG WITH THE ONE THEY'VE GOT AT SCHOOL?
YOU DON'T GET ANY TIME ON THAT — NOT IF YOU WANT TO DO PROPER COMPUTING.
I'M SORRY, BEV, BUT THE ANSWER'S NO AND IT'S GOING TO STAY THAT WAY. IF WE COULD WE WOULD.
I'LL GET HOLD OF ONE SOMEHOW.
NEXT DAY IN SCHOOL.
MORNING, BEV. WE WANT A WORD.

LOOK, I'M SPEAKING TO YOU
SO, RUN OUT OF FIRST YEARS TO FRIGHTEN, HAVE YOU?
THIS COMPUTER COMPETITION, ARE YOU GOING IN FOR IT?
IF I CAN HAVE A 64K RAMPACK, A LIGHT PEN AND A FLEXIBLE RIBBON CONNECTOR, I MIGHT THINK ABOUT IT.
WHAT?
A FLEXIBLE RIBBON CONNECTOR. IT PLUGS INTO THE BACK OF A MICRO AND CONNECTS WITH A RAMPACK. IT STOPS YOU GETTING WHITE-OUTS.
DON'T TRY AND BE CLEVER WITH US. WE WANT YOU TO WRITE A PROGRAM FOR THIS COMPETITION.
FORGET IT. I ONLY WRITE PROGRAMS FOR MYSELF.
THERE'S NOTHING WRONG, IS THERE, BEV?
NO, MISS PATTERSON.
THERE'S NEIL STANBURY AND JASON HUMPHREYS. I BET SIR GAVE THEM SPECIAL PERMISSION TO USE THE MICRO DURING LUNCH-TIME—WALLIES!
IT JUST MIGHT BE THE RIGHT TIME TO GET MY OWN BACK.

PERFECT, THEY'VE LOADED A PROGRAM ALREADY.
SEEN MY NOTEBOOK, HAVE YOU? I THOUGHT I LEFT IT HERE.
THAT'S FUNNY. THEY HAVEN'T SAID ANYTHING. IF I WAS THEM I'D BE VERY NERVOUS ABOUT LOSING MY PROGRAM DUE TO ANOTHER SUDDEN RAM CRASH.
WHAT ARE YOU DOING?
RUNNING A PROGRAM FOR MR. DICKERSON.
OH YEAH— SURE IT'S NOT FOR YOU?
YOU DON'T WANT THIS GROTTY PRINT-OUT, DO YOU?
YOU CAN'T DO THAT!
TOUGH LUCK! AND THAT'S GOOD-BYE TO YOUR PROGRAM. SEE HOW YOU LIKE IT, CREEP!
WHAT ARE YOU DOING, JEAVONS?
CONTINUED NEXT PRINTOUT.

CHILDREN'S EDUCATIONAL SOFTWARE

The MICRO MASTER Series for 7-13 years (any SPECTRUM)

RESEARCHED, DESIGNED AND TESTED by teachers with just one aim TEACHING. Easy to use — just RUN.

THE FOUR RULES OF NUMBER
(A package of 5 programmes)
This package promotes FAST and ACCURATE calculation ability at increasingly difficult levels. It is very EFFECTIVE as can be seen by consulting the enclosed grading tables for assessments of pupil's performance (given his age).

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THE FOUR RULES PACKAGE	£11.70
LANGUAGE DEVELOPMENT CASSETTE	£7.90
(State pupil's age.)	1 of each £14.50

Cheques to MICRO MASTER, Dept. LR, 94 Airedale Ave, Chiswick, London W4 2NN. For further details phone Dr. K. W. Glasson 01-747 1373.

EXPERIENCED SINCLAIR/COMMODORE PROGRAMMERS REQUIRED IN WEST LONDON

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PINBALL WIZARD has bumpers, rollovers, a jackpot, slingshots and 3 flippers that you can even use to trap and hold the ball! You can even nudge the table - but not too often or it tilts! PINBALL WIZARD IS PURE ENJOYMENT.

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Commodore 64
SUPER GRIDDER

The FIRST 64 games cassette to have SIMULTANEOUS TWO-PLAYER ACTION-realisitic sound effects too.

New

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CITY

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•ZX81 • DRAGON • ATARI •
• VIC 20 • apple ON DISC & CASSETTE •

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SPACE MISSION	ORBITTER	ROCKET LAUNCH
LUNAR LANDER	MOTORWAY	PLANETS
PLASMA BOLT	FORCE FIELD	BLACK HOLE
STARTREK	NIM	DYNAMITE
RADAR LANDING	TUNNEL ESCAPE	DO YOUR SUMS
ATTACKER	BARREL JUMP	DERBY DASH
GALACTIC DOGFIGHT	CANNONBALL BATTLE	SPACE SEARCH
ZION ATTACK	OVERTAKE	UNIVERSE
IVASIVE ACTION	SITTING TARGET	RATS
OXO	SMASH THE WINDOWS	TANKER
BOGGLES	SPACE SHIP	PARACHUTE
PONTOON	JET FLIGHT	JETMOBILE
SKI JUMP	PHASER	HIGH RISE
HANGMAN	INTRUDER	THE FORCE
OLD BONES	INFERNO	EXCHANGE
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GWENT
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I ENCLOSE CHEQUE P.O. FOR £9.95 (WHICH INCLUDES VAT AND DELIVERY).

PLEASE SEND ME 50 GAMES ON A CASSETTE FOR MY _____ COMPUTER.

NAME _____

ADDRESS _____

PARENT/GUARDIAN SIGNATURE _____

LR 29.9.83

Load Runner T-shirts for lucky Decoders

ONCE AGAIN three exclusive *Load Runner* T-shirts are waiting to be claimed by the Decoders whose membership numbers are listed in the coded printout below. To discover whether you are one of the lucky ones, decode the message using your Cipher Book. The message also contains an easy question. If your number is included, claim your prize by writing your name, address and membership number on a postcard, together with the answer to the question, and post it to me at my installation base, to arrive not later than October 14th. Don't forget to state whether you require a small, medium or large size T-shirt. The prize-winners will have their photographs displayed on this page in future printouts.

LOAD RUNNER
THE GALAXY'S FIRST COMPUTER COMIC
DECODERS

REB FSLDX GBGIBPQ KPB:
JHB JHB QAW YAUB.
JHB ZBPJ BATER YJSP.
JHB RVJ YAUB ZBPJ.
VEJ LJGBQ YPJG REB MFKHBR ZAFFXDJH?

(Keyword No. 4)

Join the Club

THE LOAD RUNNER DECODERS is a rapidly growing fan club for readers of the first computer comic in the galaxy. A new member will receive a personalised security pass with his or her photograph mounted upon it, together with a membership number. This Security Pass will give the bearer a reduced admission charge to exhibitions and computer fairs announced from time to time in the Decoders page of Load Runner.

Each member will also receive the Decoders Cipher Book which provides the key to the coded messages that appear in each printout. Exciting prizes are awarded to successful Decoders whose membership numbers appear in those messages.

The cost of membership is £3. If, however, you cut out the word Decoders from the top of this page and from one other printout of Load Runner, *you can join the club at the special reduced rate of £1. Simply fill in the application form below and send it together with your membership fee and TWO passport-size photographs to: The Controller, Load Runner Decoders, ECC Publications, 196-200 Balls Pond Road, London N1 4AQ. Please make cheques or postal orders payable to ECC Publications Ltd.*

List below the story/programs and fact routines that you like best in Load Runner.

1 .....

2 .....

3 .....

What do you dislike most in Load Runner?

.....

Do you have a computer? YES/NO

Name ....Age .....

Address .....

.....

Star Letter

ARE YOU a Decoder with a difference? Do you have an interesting hobby or an unusual use for your computer? Has something out-of-the-ordinary ever happened to you? Write and tell me about it, including a photograph if possible. £5 will be paid for each Star Letter published.

War Games Book Winners

Graham Skipworth, Sheffield; John Conway, Preston, Lancs; Jill Roberts, Newbury, Berks; H. C. Armstrong, East Croydon; Sheikh Rahman, London SE19; Lynton Malpas, Tewkesbury, Glos; Carlo Iacono, Watford, Herts; Robert Crompton, Devizes, Wilts; Rowland Turner, Chertsey, Surrey; Robert Barnes, East Hanninfield, Essex; Andrew McGowan, Bearsden, Glasgow; Jonathan Yearsley, Rhyl, Clwyd; Trevnal Lacy, Farnborough, Hants; Brian H. Longstaff, Sheffield; T. Halton, Nantwich, Cheshire; Andrew McGovern, Townhead, Coatbridge; T. A. Willis, Bolney, W. Sussex; Mark Newman, Hall Green, Birmingham; John Breedon, Mapperley, Nottingham; Chi-Wah-Yau, London NW1; I. Murphy, Accrington, Lancs; Mark Vivash, Portsmouth; Mark Harris, Croydon, Surrey; Duncan Gordon, Brierfield, Lancs; Nicholas Winchester, Loughborough, Leics; Louis Wood, London E18; John Cotton, Great Yarmouth; A. P. Westney, Shoebury, Essex; William Biney-Tay, London W8; Daryl Bloomfield, Basingstoke, Hants; David Worsdale, Waltham Cross, Herts; Gornall Leach, Tyne & Wear; John Medany, North Harrow, Middx; Beowulf Grimbly, London N4; Bobby Earl, Prenton, Birkenhead; Paul Monger, Iver Heath, Bucks; James Solomon, Beverley, North Humberside; Fablo Passaro, Croesyceiliog, Cwmbran; John Crawford, Alexandria, Dunbartonshire; Gorbaksh Singh, Ilford, Essex; David Campbell, London SE14; Christopher Shaw, Southowrom, Halifax; John France, Easterhouse, Glasgow; Richard Adamson, Taunton, Somerset; John Burnham, Penrith, Cumbria.

The data snake in this printout will provide you with an alternative to a digital computer. The snake begins with the letter A. All you have to do is find the correct letter A and follow the directions which are given below. North is straight up the page.

W	E	I	A	R	Y	O	T
I	W	A	L	L	G	F	I
T	A	B	N	A	V	I	T
S	A	A	L	O	R	T	A
L	D	A	M	K	G	U	E
T	C	C	N	O	T	U	W

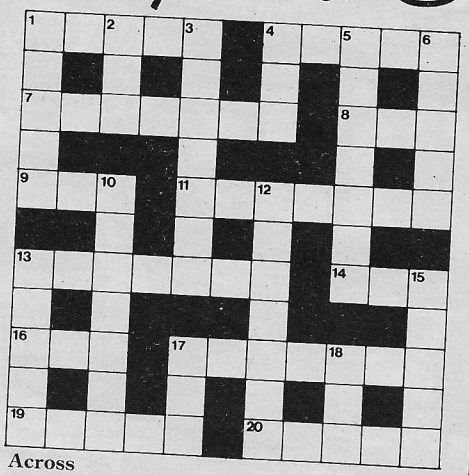
Secret path: SE, SW, E, E, SE, SE, NE

A computer is given the following task. You think of a number between one and 100. In not more than seven guesses the computer can find the number. You must help the computer by telling it whether the last guess was lower or higher than the number you thought of. Can you describe how the computer goes about the task?
Wordplotter—

ANSWERS to the puzzles in last printout:

The Data Snake secret word is DIGITAL.
The Centipede is 640 pods long when it fills the screen.

Wordplotter 8



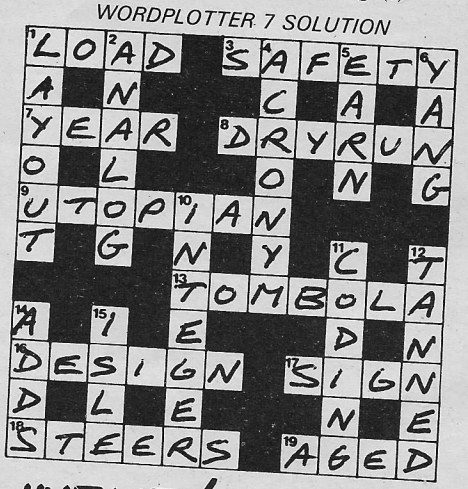
Across

1. Computer worker (5)
4. First stage in computer use (5)
7. Tennis with linked computers? (7)
8. Positive answer (3)
9. Electronic data processing at first (3)
11. Input system for shops — how to behave in a pub? (3-4)
13. George's algebra (7)
14. Instruction in assignment (3)
16. Take little Susan to court (3)
17. Programmer's customers (7)
19. Legal files used in the Comal language (5)
20. They surround boards and may connect connectors (5)

Down

1. Set of hills the input number should be in (5)
2. Smallest number (3)
3. What you're in if you stay up late computing (7)
4. Used on PAPER (3)
5. To the employees, a firm's most important software? (7)
6. A sense, of art, perhaps (5)
10. It follows 4 across (7)
12. When the program finally succeeds or fails (3-4)
13. Fundamental programming language (5)
15. Jobs set by 17 across (5)
17. Tiny characters per second (3)
18. What parents do if you're computing? (3)

WORDPLOTTER 7 SOLUTION



INPUT/OUTPUT

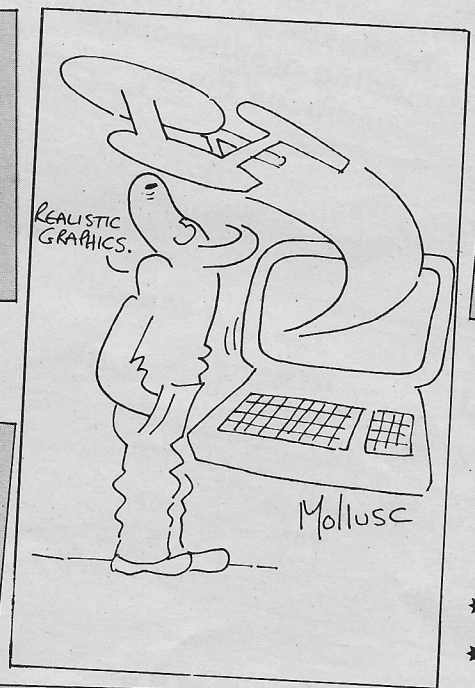
Easy to read

I THINK your computer comic is good as it is *almost* easier to read than home computing magazines. The picture stories I like best are Time Plan 9, The Invasion of the Arcadians and I think Load Runner is good. Your Buzzword section and your A–Z of computers is useful, too.

What does ECC mean?

Patrick Lea, Cheshunt, Herts.

What do you mean,* almost? *ECC stands for European Communication Consultants. Anything else you would like to know?



Dislikes

THERE ARE some things I do not like about *Load Runner*. One thing is that the Decoder's Club is expensive. Could your price for membership be about £1, please?

The second thing is that there is not sufficient information on new micros, games and educational programs, and books for micros. Perhaps there could be a section on what a micro is and a detailed section on a micro every issue.

S A Rahman

Perhaps you should be reading a computer magazine instead of a computer comic. In any case, there must be some bugs in your data files, reader Rahman. My operators have output data on every new micro launched since* Load Runner *was up and running—the Sord M5, the Aquarius and the Electron.

Each printout contains games reviews and micro specifications in my Softspot and A–Z of Computers fact routines. Reviews of books and educational software will be featured in future printouts.

From time to time I will allow readers to join the Decoders at a reduced rate. The first of the special offers can be found on the opposite page.

Brilliant

I HAVE NOT bought a comic for at least three years but when I saw that there was a computer comic, I jumped to it. Now I am sure I shall buy *Load Runner* for the next few years. Load Runner is a brilliant story; I love the idea of having a person inside a computer. Ram and Rom are really amusing. Computafax is interesting; so is Brainy's Brainbox and everything else is ace, including the crossword.

I am glad you have programs in the comic and I think they should be for different computers each printout but I think that you should have no more than a few programs each week as *Load Runner* is a comic, not a magazine.

Robert Courtney, Isleworth, Middx.

More programs

YOUR COMIC is one of the best I have ever read but you do not include many programs, hints or a guide to help first-time buyers. I own a Vic-20 and I am sure many other readers feel the same way.

I like your puzzle section but please give us some more programs.

Barry Jones, Warminster, Wilts

My programmers always aim to please, Barry, and you will find three pages of programs in this printout. Don't forget, I will pay £10 for each program printed, so if you have games or routines you think our readers might like, please send them. Include a stamped addressed envelope if you want your cassettes returned.

Vectrex Competition

1st Niall Gilsenan, 9, Tinahely, Co Wicklow
2nd Paul Smeaton, 12, Dundee
3rd Keshra Patel, 14, Harrow, Middx
4th Cuong Truong, 14, London W9
5th Fiachra Stokes, 12, Ballinteer, Dublin
6th Justin Freeman, 15, North Oxford

I will pay £3 for each letter or joke printed.

Write to: The Controller, Load Runner, 196-200 Balls Pond Road, London N1 4AQ

FANTASTIC FREE GIFT!

IN PRINTOUT No 9

A great pop single TALK TO ME by the new computer group MAINFRAME

PLUS Three ready-to-load programs for the Dragon, BBC B and Spectrum computers providing a dazzling graphic display to accompany the music.

PLUS Load Runner meets the Spiders in a deadly confrontation based on the well-known computer game.

PLUS Jan and Marc fight for their lives against the evil Simian in Trumbull's World.

PLUS All your favourite strips, features, puzzles and competitions.

DON'T MISS IT!

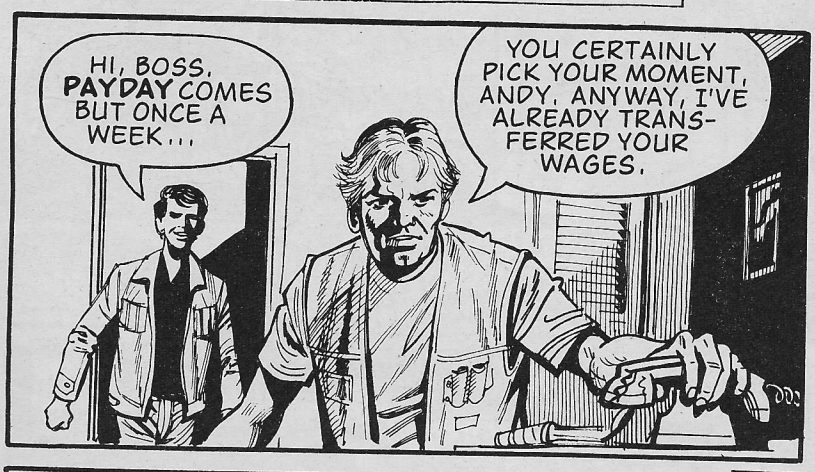
Place an order NOW with your Newsagent for Printout No 9.

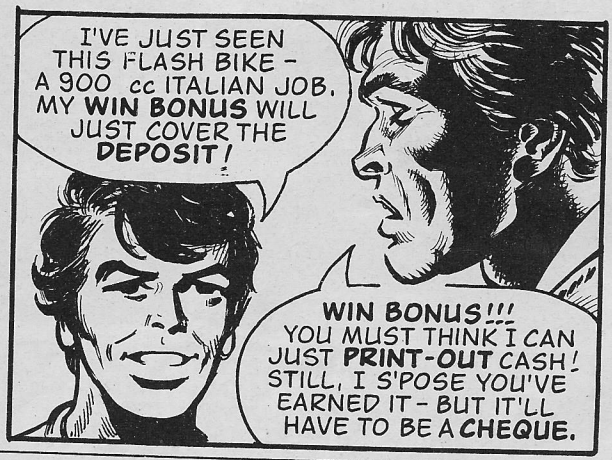
ON SALE

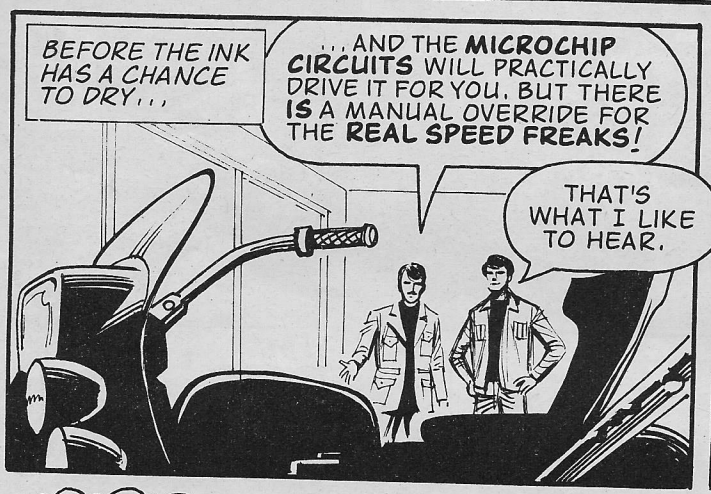
OCTOBER 13

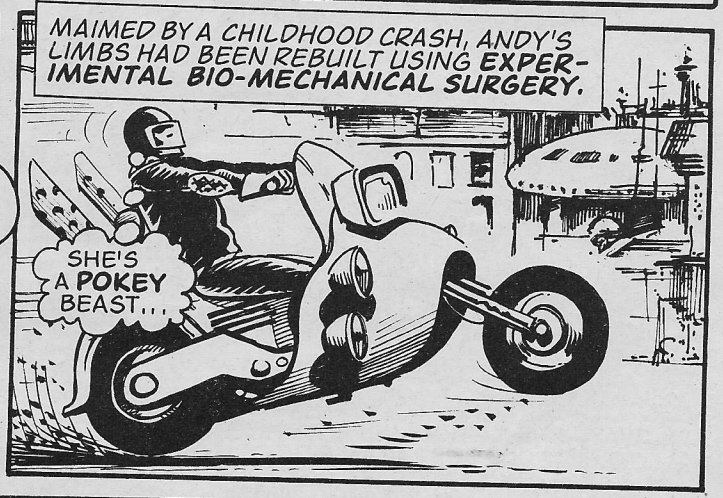
Andy Royd-the DOMINATORS' Rogue star!

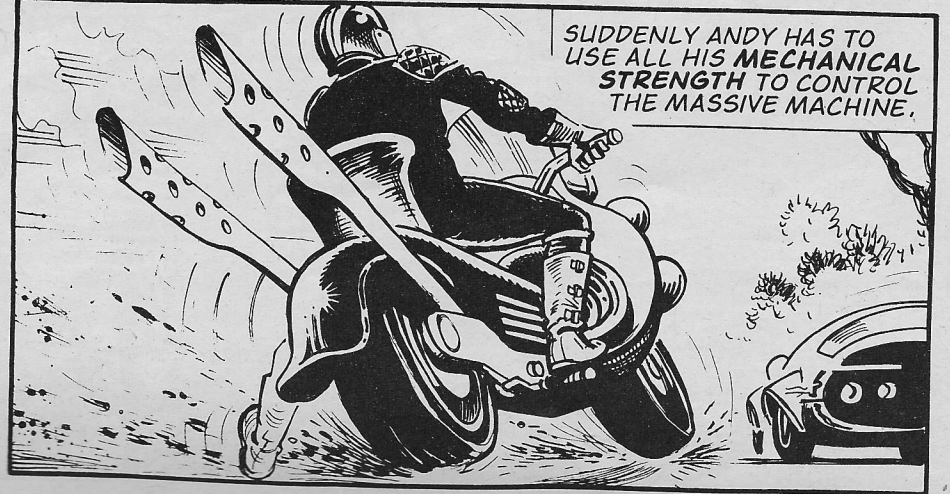
DAVY'S DOMINATORS HAVE BEEN THREATENED WITH CLOSURE BY NEAVE MARSHALL ESTATES IF THE TEAM OF ROBOT FOOTBALLERS FAIL TO MAKE A PROFIT IN THE COMING SEASON...





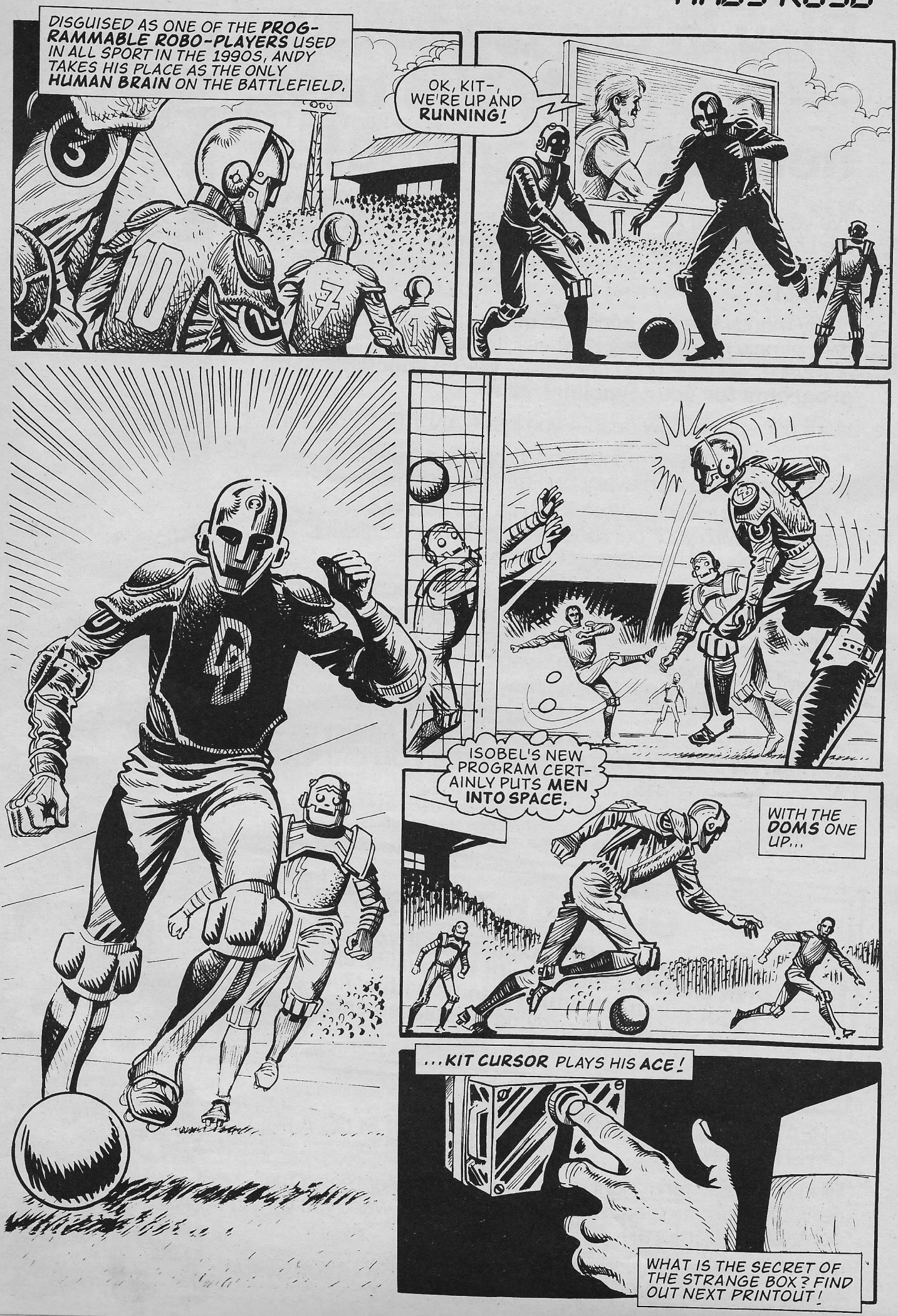






BUT HE'D NOT LOST ANY OF HIS LUST FOR SPEED!

THAT WAS KIT CURSOR! WHO THE HELL HIT HIS PANIC BUTTON!?
THERE HE IS... BUT SURELY THOSE ARE MARSHALL'S WHEELS!
WE'RE PLAYING THE CURSORS ON SATURDAY. IF ONLY I COULD HEAR WHAT THEY'RE SAYING.
I DUNNO WHAT THEY'RE UP TO, BUT IF FAT MAN MARSHALL'S INVOLVED, IT AIN'T FOR THE DOM'S BENEVOLENT FUND.
NME 1
IN THE DOM'S COMPUTER ROOM, DAVY AND ISOBEL, THEIR NEW PROGRAMMER, LISTEN TO ANDY'S STORY.
SO YOU THINK MARSHALL'S GOT HIS GREASY FINGERS INTO ANOTHER MURKY DEAL?
IT CERTAINLY LOOKS THAT WAY - AND I THINK WE'RE GOING TO FIND OUT JUST HOW MURKY ON SATURDAY.
SATURDAY ARRIVES... AND SO DOES KIT CURSOR...
I'D BETTER GET CHANGED. WATCH MY BACK TODAY, BOSS... I'M NERVOUS ABOUT THIS ONE.
MY MAN! THE SUMMER IS TOO LONG A BREAK FOR US JOY STICKERS!
SCRIPT - CHRIS WINCH
ART - JOHN STOKES
LETTERS - S. CRADDOCK


DISGUISED AS ONE OF THE **PROG-RAMMABLE ROBO-PLAYERS** USED IN ALL SPORT IN THE 1990S, ANDY TAKES HIS PLACE AS THE ONLY **HUMAN BRAIN** ON THE BATTLEFIELD.
OK, KIT-, WE'RE UP AND **RUNNING!**
ISOBEL'S NEW PROGRAM CERT-AINLY PUTS **MEN INTO SPACE.**
WITH THE **DOMS** ONE UP...
...**KIT CURSOR** PLAYS HIS **ACE!**
WHAT IS THE SECRET OF THE STRANGE BOX? FIND OUT NEXT PRINTOUT!

Play in the big league — with only the best, newest programs!

We've searched for brilliant new program sources throughout the U.K. and North America to find an exciting collection of new games — and business programs — many of which cannot be bought by mail order from any other source!

Every month, we'll be adding to our catalogue to bring you the best of new games, new business, educational and household software. And the good news is — **we're specialising in programs for your Sinclair!**

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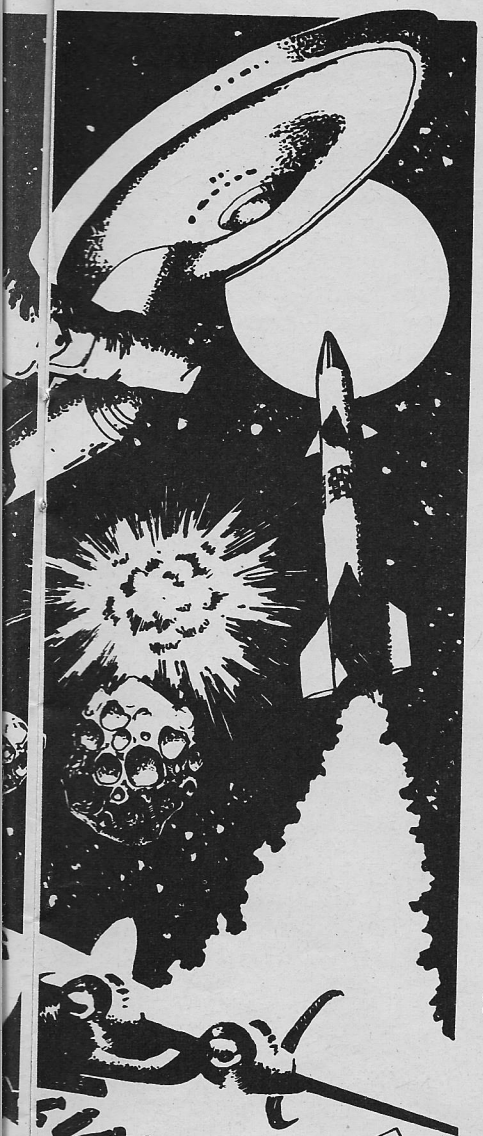
The Software Workshop, Yew Tree, Selborne, Hants GU34 3JP



Here's a whole NEW selection of the latest games, the best-value software for your ZX-81 or Spectrum.

ZX81 Software

1-01 Stock Market — £3.95
Buy and sell your way to millions! 16K RAM

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First division fun for the soccer enthusiast. 16K RAM

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Match your wits alongside the superstars. 16K RAM

1-12 Avenger — £4.95
Avoid missiles and bombs to become the ruler. 16K RAM

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[See 1-12 under ZX81]. 48K RAM

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Spectrum version of the ever-popular arcade game. 16K or 48K RAM

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This favourite has to be a winner. 48K RAM

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Rescue the Princess from marauding patrols. 48K RAM

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The harmless way to take on the one-armed bandit. 48K RAM

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To: The Software Workshop, Yew Tree, Selborne, Hants GU34 3JP

I wish to order the following programs. I understand that:

* I will receive a FREE blank cassette with every 2 programs ordered
* I can return products within seven days if not entirely satisfied and receive a replacement.

Ref No	Qty	Title	Price

Postage, packing and handling: add 45p for the first cassette, and 25p for each additional cassette. Non-UK orders add extra 50%

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I enclose a cheque/postal order for _____

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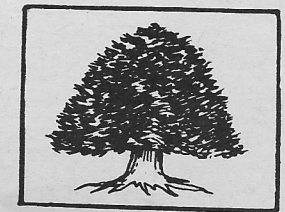
(Allow 28 days MAXIMUM FOR DELIVERY)



ACORN HUNT

DAVID HUNT, 23-year-old brother of former world champion James, has embarked on what might prove to be the most important stage of his motor-racing career. Backed by Acorn Computers, David is driving a Ralt RT3 for the Eddie Jordan Formula Three team, the biggest of its kind in Britain, with five cars and drivers.

From the age of 16 David has been fascinated by racing and for three years he drove 100cc karts in his spare time from school. Eventually he decided to move to Formula Ford and, after working as an electrician, mechanic, painter and decorator, petrol pump attendant, milkman and finally salesman, he saved enough money and obtained sponsorship to

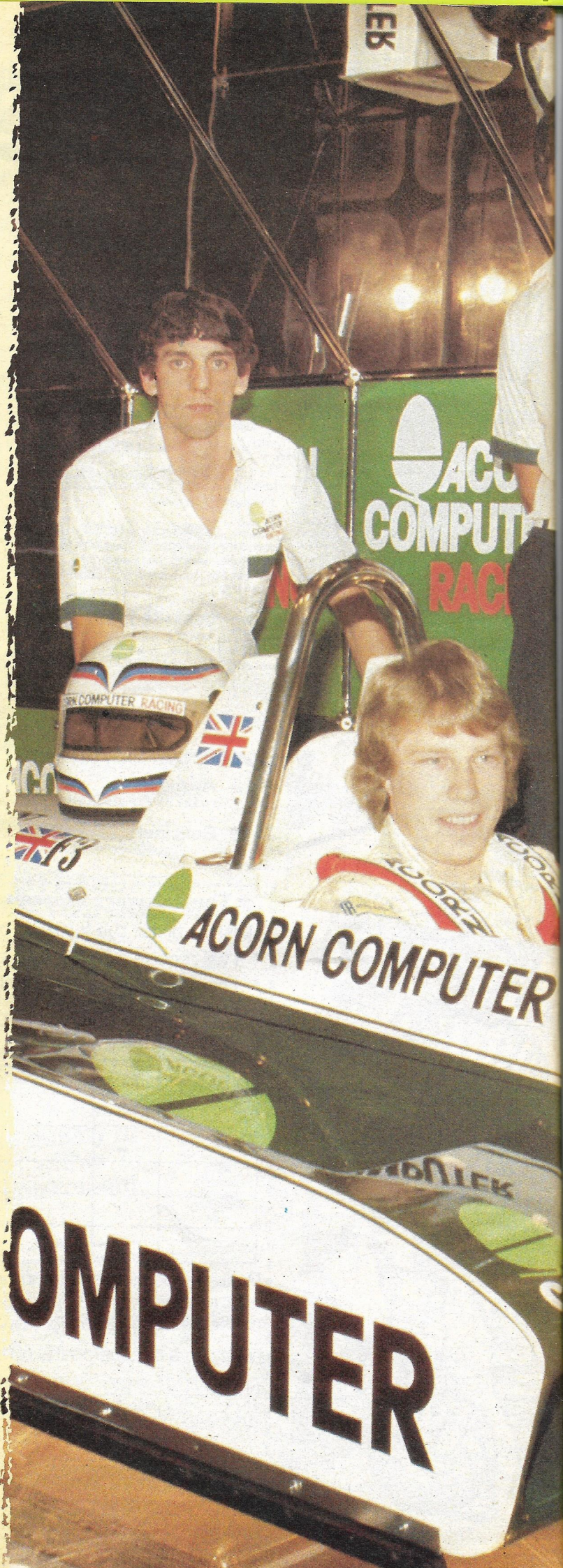
Acorn backs David Hunt in Formula Three

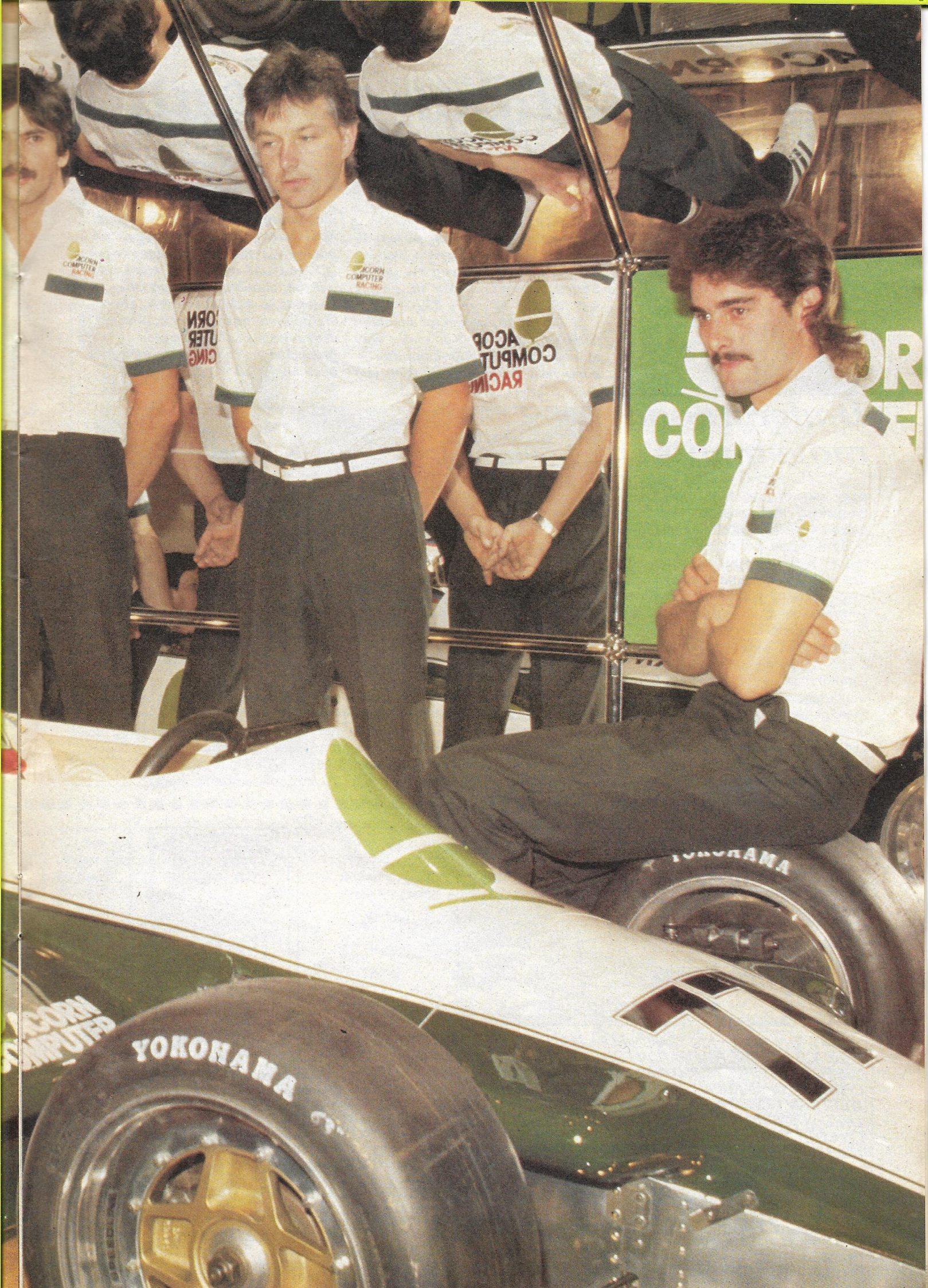
enter Formula Ford racing in 1981. In the 1982 season he received accolades from the race-going public and received a special commendation from the Guild of Motoring Journalists as an up-and-coming talent.

Not only will David be driving an Acorn-sponsored car but he will be involved with Acorn plans to develop a computer Car and Track Simulation system, which will allow racing teams to cope with all random factors and conditions which can occur on Europe's race tracks. Eventually, Acorn will be developing a fully-computerised car and pit service, with David as the guinea pig.

In addition to his racing exploits, David is now joint managing director of a successful Ferrari broking company at Farnham, Surrey and it seems that computers will soon be part of his day-to-day life there, too, as he is buying a BBC micro to help to run the business.

If you want to see David in action, he will be driving the Acorn car at Donington Park on October 8 and 9, at Thruxton on October 23 and again on November 12.

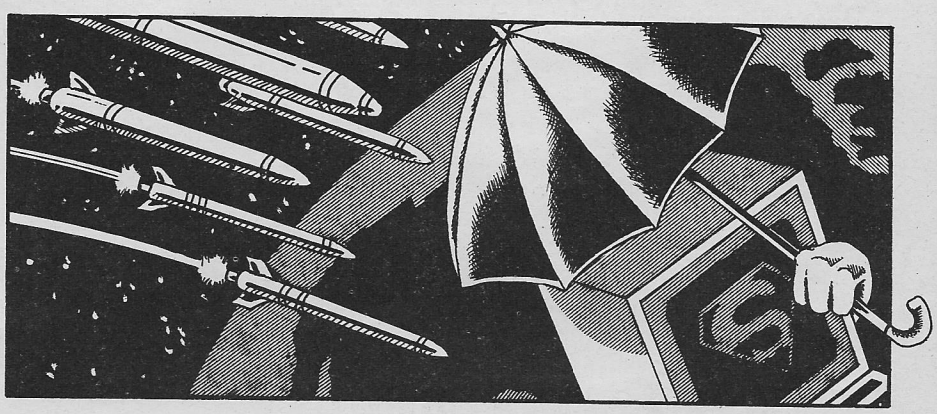



ACORN
COMPUTER
RACING
YOKOHAMA

Super-computer saves the day?

THE FILM WarGames, ***in which a super-computer reacts automatically to what it thinks is a Russian nuclear attack, plunging the United States into World War III, seems less far-fetched every day.***

In American top-secret research establishments work is under way on developing a super-computer — a machine capable of thinking and making decisions in split seconds. The super-computer will be incorporated in the revolutionary new U.S. missile defence system and will be capable of responding in seconds to a Soviet attack, shooting-down huge intercontinental ballistic missiles before the man on the ground even knows an attack has been launched.



Underground movements

LAST YEAR, 541 million journeys were recorded on the London Underground and most of them involved the use of escalators and lifts.

Until recently, London Transport relied on station staff to report failure of the equipment but now it is experimenting with computer alarm systems at five stations on the Northern Line.

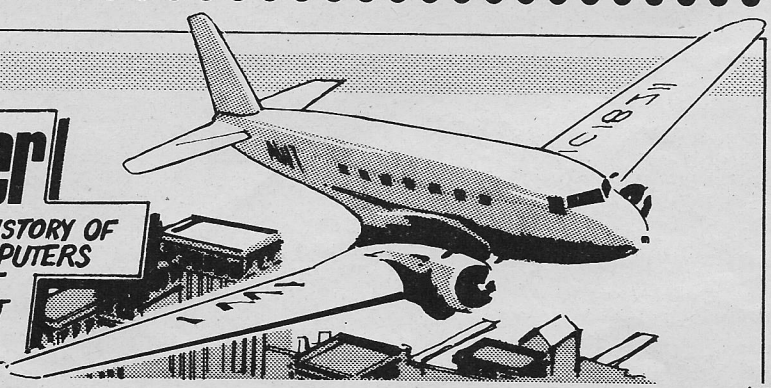
As soon as a lift or escalator fails, a report is sent to the Alphatronic computer at the Control Centre, detailing the name of the station and the equipment concerned. The computer is linked also with a new public address system, allowing announcements to be made from the control centre to any stations on the line.

Shoebox brainbox

IF ELECTRONIC hardware continues to shrink at its present rate, it is conceivable that within the next 20 years a computer with a capacity equivalent to the human brain will be no bigger than a shoebox and will cost little more than an average motor car. Thirty years ago the same brain-sized collection of hardware would have filled a football pitch and cost the equivalent of 10,000 million family cars.

The Computer Story

A HISTORY OF COMPUTERS PART EIGHT



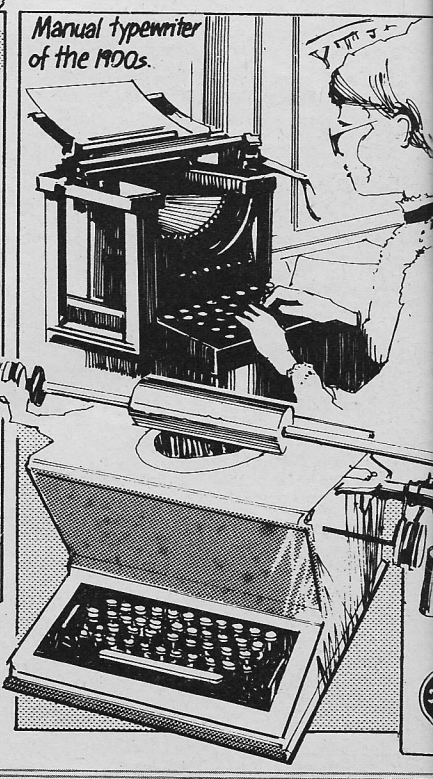
BY THE 1930s — 100 YEARS SINCE BABBAGE LAID THE FOUNDATION FOR COMPUTERS - THE WORLD HAD CHANGED DRAMATICALLY. IN THE WESTERN WORLD MOST PEOPLE LIVED IN TOWNS, WENT TO SCHOOL, COULD READ AND WRITE, AND WORKED IN INDUSTRY AND COMMERCE.

MECHANISED TRANSPORT HAD MADE THE WORLD A SMALLER PLACE, AND ELECTRICITY REACHED INTO MOST HOMES, OFFICES AND FACTORIES.

ALTHOUGH AT FIRST SIGHT THEY MIGHT SEEM TO HAVE LITTLE TO DO WITH OUR STORY, THESE CHANGES - SOCIAL, TECHNICAL AND COMMERCIAL - PREPARED THE GROUND FOR THE GRADUAL INTRODUCTION OF COMPUTERS.

THE WAY AHEAD

Above: Douglas DC-3 airliner and 'skyscrapers' - symbols of western man's technical and social progress by the 1930s.



What a load of rubbish

STUDENTS at Aston University have been looking closely at people's dustbins, sifting the rubbish and feeding the data into a computer. A wasteful use of new technology? Not really — the computer assessment of the refuse gives vital information about the amount of junk which can be usefully recycled.

Buzzwords are the jargon of the computer world and can be very confusing. Below, *Load Runner* continues its glossary of computing terms. Get buzzing.

Fault. A problem which occurs in the hardware of the computer. It could be something wrong with the electronics inside the keyboard casing or it could be a fault between the computer and one of the devices attached to it, like a disc drive.

Feed. Giving information to the computer. It can be done in several ways—via the keyboard, from punched tape, from punched cards or from backing storage such as discs or cassette tape.

Feedback. Information or data obtained from the computer. It will be output from a screen, a printer or a plotter. It is the opposite of feed and you can receive no feedback without giving the computer some feed in the first place.

Fibre optics. The science of sending information along cables which are made up of a glass-like plastic compound. The information is sent along the line in the same way as a telephone call is sent along a wire but the result is usually visual instead of audio.

Field. A portion of memory within a computer file of information which contains one bit of data. A field could, for instance, contain the date of birth of somebody.

File. A collection of bits of data which have some connection with each other. For instance, a file could contain all the names and addresses of the people in your class at school. Files can be either data, such as names and addresses, or programs.

Floppy disc. A plastic-coated, record-shaped object on which you can store information from a computer, such as programs or data. While it takes several minutes to load a program into a computer from cassette tape, it takes only a second to load from disc. That is because the computer has to read a program from tape at the speed of the tape recorder but the disc is faster.

Flowchart. A way of putting on paper the way a program should work before writing that program. The chart is a simple model of what a program should look like when running properly.

Function. Has two meanings. It can mean the operations which the computer can perform. It also describes the mathematical operations which the computer can handle. For instance, finding the square root of a number is a function and the computer language word to tell the machine to find a square root is SQR, followed by the number the square root of which you want to find.

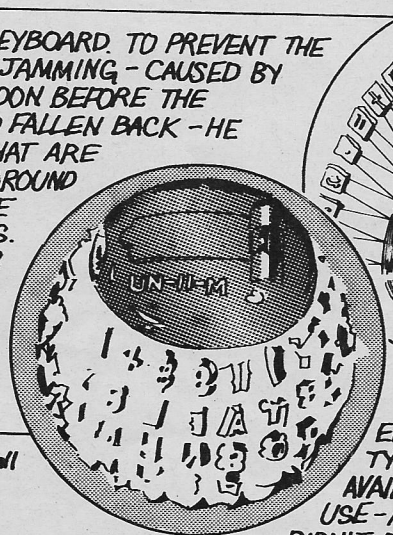
TYPEWRITERS ULTIMATELY SHAPED THE APPEARANCE OF MODERN COMPUTERS – AND MADE PEOPLE FAMILIAR WITH KEYBOARDS, DOCUMENTS AND LETTERS.

SETTING TYPE (WORDS) IN METAL AND PRINTING FROM IT WAS ALWAYS EXPENSIVE. MANY INVENTORS TRIED TO MAKE A FAIRLY CHEAP MACHINE THAT WOULD WRITE IN SUCH A WAY THAT THE RESULT APPEARED PRINTED.

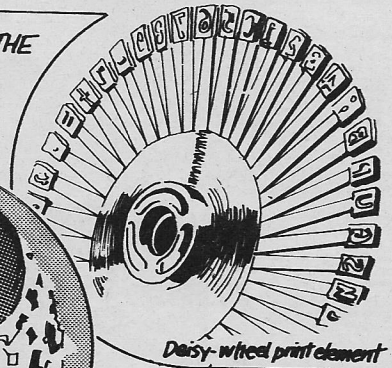
THE FIRST TO SUCCEED, IN 1867, WAS AN AMERICAN – C. LATHAM SHOLES. HE MADE HIS MARK ON PRACTICALLY EVERY COMPUTER IN USE TODAY –

THE 'QWERTY' KEYBOARD. TO PREVENT THE TYPE-BARS FROM JAMMING – CAUSED BY A BAR RISING TOO SOON BEFORE THE PREVIOUS ONE HAD FALLEN BACK – HE ARRANGED THOSE THAT ARE USED MOST OFTEN AROUND THE OUTSIDE OF THE SEMI-CIRCLE OF BARS.

THE LAYOUT WAS DESIGNED TO SLOW DOWN THE TYPIST ENOUGH TO ENSURE THE TYPEWRITER WORKED!



IBM golf-ball



Daisy-wheel print element

IN THE 1920s ELECTRICALLY-POWERED TYPEWRITERS BECAME AVAILABLE FOR OFFICE USE – ALTHOUGH THEY DIDN'T BECOME COMMON UNTIL THE 1950s. THE 1960s SAW THE INTRODUCTION OF THE GOLF-BALL TYPEWRITER BY IBM – WHICH ALLOWED THE TYPE-STYLE TO BE CHANGED AT WILL. THE DISTINCTION BETWEEN TYPEWRITERS AND COMPUTER PRINTERS IS QUICKLY DISAPPEARING NOW THEY BOTH USE DAISY-WHEELS.

Left: First working model of Sholes' typewriter.
Below: 'QWERTY' Keyboard devised by Sholes.

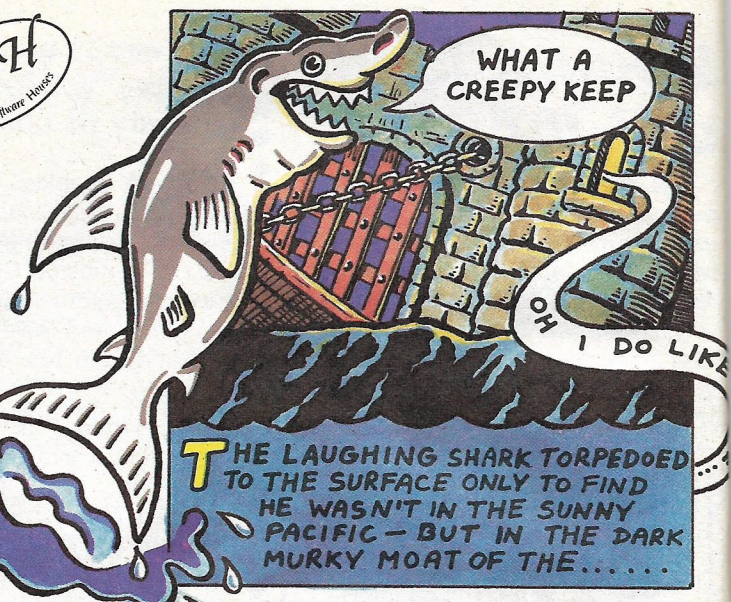
Written and drawn by Chris Smithers

Virgin Games!

GSH Guild of Software Houses

THE AMAZING ADVENTURES OF THE LAUGHING SHARK

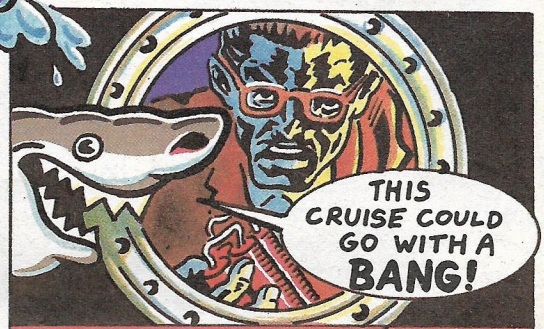
PART ONE



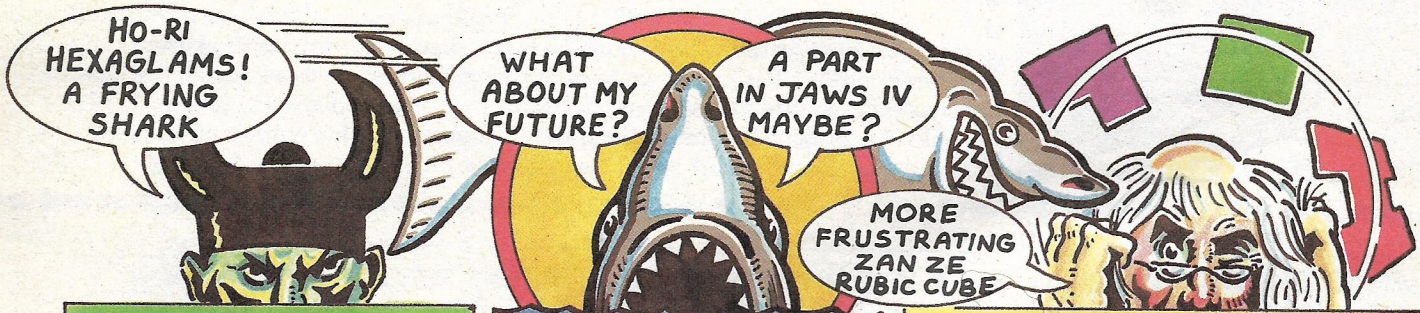
THE LAUGHING SHARK TORPEDOED TO THE SURFACE ONLY TO FIND HE WASN'T IN THE SUNNY PACIFIC — BUT IN THE DARK MURKY MOAT OF THE.....

CASTLE ADVENTURE WITH A THOUSAND DASTARDLY DEATHS — ACCOMPANIED BY THE MAD ORGANIST — PULLING OUT ALL THE STOPS.....

ESCAPING THE DEADLY SOUND OF MUSIC, THE LAUGHING SHARK NARROWLY AVOIDED A CRUISE LINER — IN A MOAT?!!



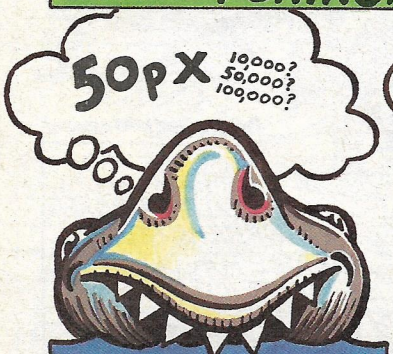
PASSING A PORTHOLE HE ESPIED NASTY DR. SINISTER PLANTING A BOMB. STOP HIM SOMEONE — OR THIS COULD TURN INTO A..... **DEATH CRUISE!!**



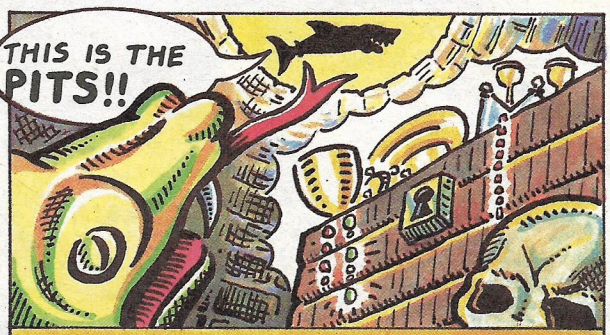
NOT WISHING TO SUFFER THE SAME FATE AS HIS COUSIN JAWS, OUR HERO DECIDED TO CONSULT THE ORACLE OF **I CHING....**

THE 4,000 YEAR OLD CHINESE ART OF THE HEXAGRAM — WITH ITS KEY TO FUTURE AND THE MEANING OF LIFE.

OVERFLOWING WITH NEWLY FOUND SELF-CONFIDENCE, LAUGHING BOY FELT READY TO HELP PROF. BATTY SOLVE THE PROBLEM OF **LOJIX** AND FIT THE SHAPES —

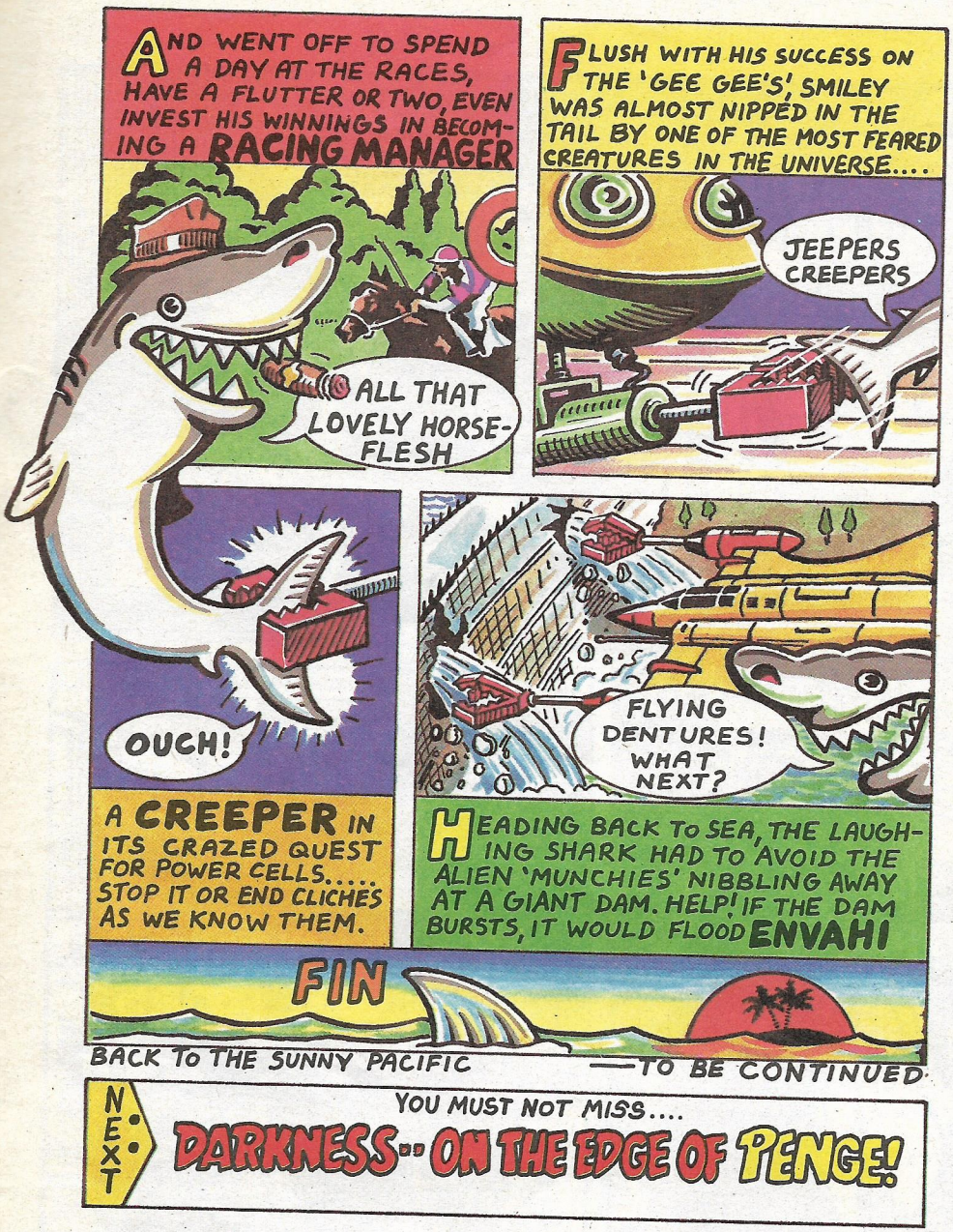


— INTO THE GRID. IF YOU MANAGE TO SOLVE IT, YOU COULD WIN THE LOJIX POT OF SILVER. 50p X EACH COPY SOLD



DIZZY FROM HAVING TO USE HIS LITTLE FISHY BRAIN OUR INTREPID 'CHUCKLES' GOT LOST AND FOUND HIMSELF IN THE DANK DEPTHS OF **KILLER CAVERNS**

WITH ITS HORDES OF TREASURE AND DEADLY GUARDIANS... TOO MUCH, EVEN FOR A SUPER FISH, SO HE HOPPED ON A BUS.....



September RELEASES

RACING MANAGER
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SPECTRUM 48K
VGC 1005
All the thrills of the racing world.
£5.95 R.R.P.

LOJIX
by Steve Webb
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VGC 1006
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DEATH CRUISE
by Lee J. Brookes
DRAGON 32
VGB 4001
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I CHING
by James Breffni
DRAGON 32
VGB 4002
Consult the Oracle – Determine your future.
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by Conrad Jacobson
DRAGON 32
VGB 4003
A humorous (insane) adventure game – set in and around an old castle.
£6.95 R.R.P.

ENVAHI
by Jeremy Walker
VIC 20 (+8K EXPANSION)
VGC 3002
The game of the film of the book of the game.
Joystick/key
£5.95 R.R.P.

CREEPERS
by Nick Rowden
VIC 20 (+3K or 8K EXPANSION)
VGC 3003
An original, fast-moving arcade game.
Joystick/key
£5.95 R.R.P.

KILLER CAVERNS
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ORIC 16K & 48K
VGC 5001
A graphic adventure game set in killer caverns.
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- **FREE ENTRY** in the next **VIRGIN GAMES GANG DRAW**;
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THE "I WANT TO BE RICH AND FAMOUS" DEPARTMENT

If you have a yearning to be **RICH AND FAMOUS** and have written an **ORIGINAL GAMES PROGRAM**, with good graphics, for any of the popular home computers other than the ZX81, **PLEASE SEND A CASSETTE VERSION** (with details) **TO US**.

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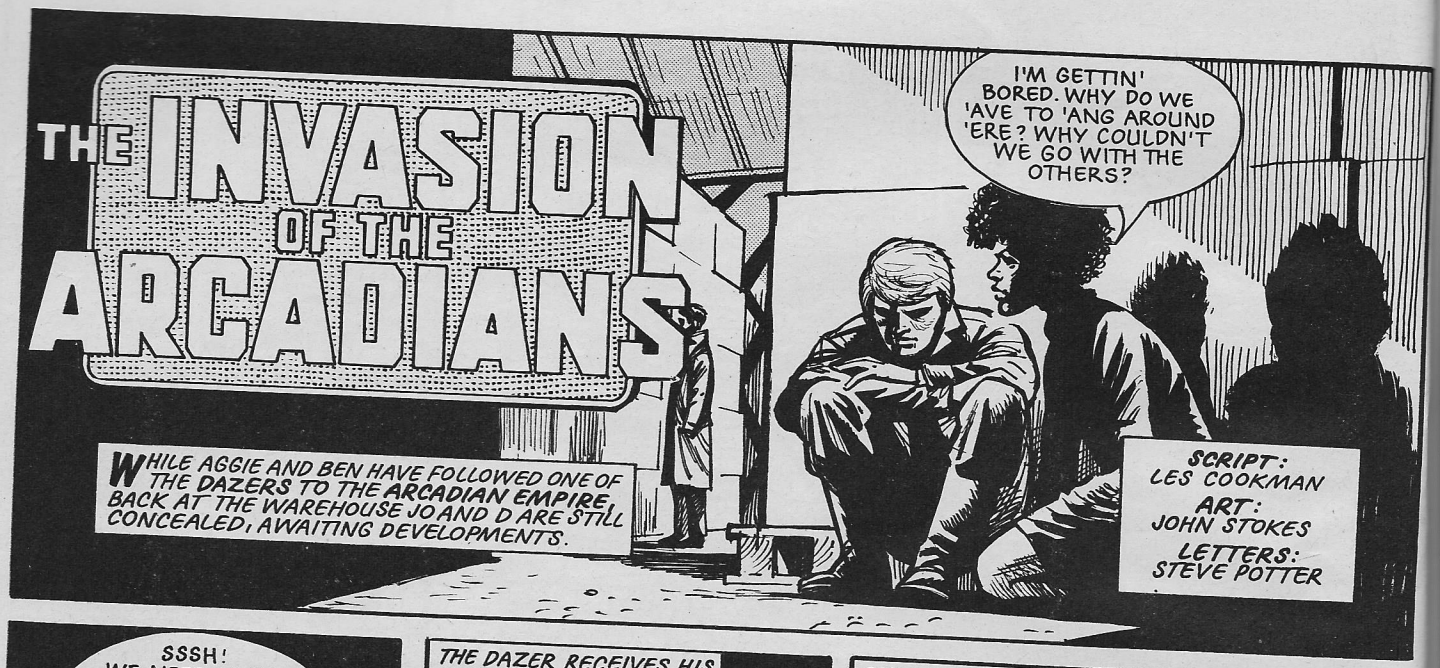
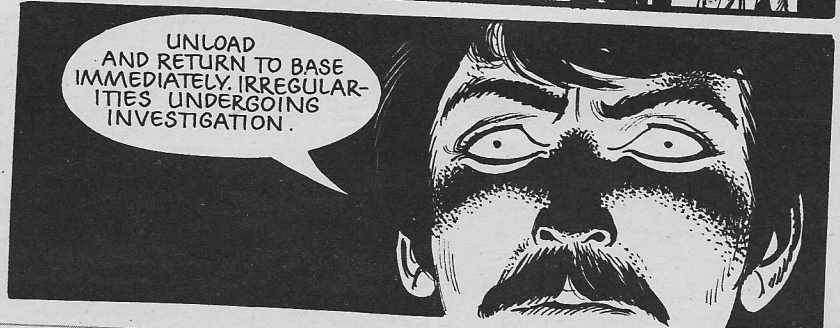
THE INVASION OF THE ARCADIANS



WHILE AGGIE AND BEN HAVE FOLLOWED ONE OF THE **DAZERS** TO THE **ARCADIAN EMPIRE**, BACK AT THE WAREHOUSE JO AND D ARE STILL CONCEALED, AWAITING DEVELOPMENTS.

SCRIPT: LES COOKMAN
ART: JOHN STOKES
LETTERS: STEVE POTTER

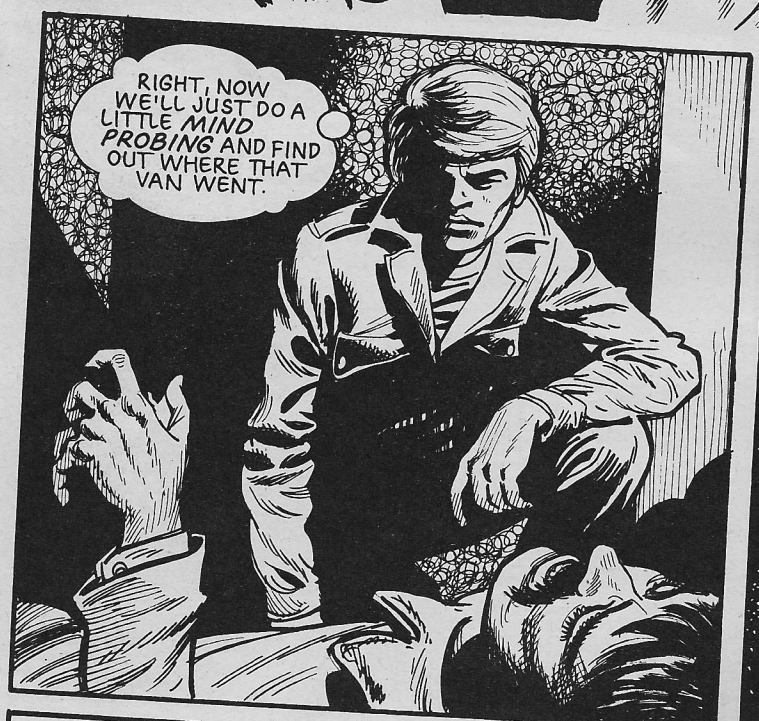


NOW, THERE'S AN IDEA. I WONDER HOW BIG THAT VAN IS?
JO PUTS HER WILD PLAN INTO ACTION.

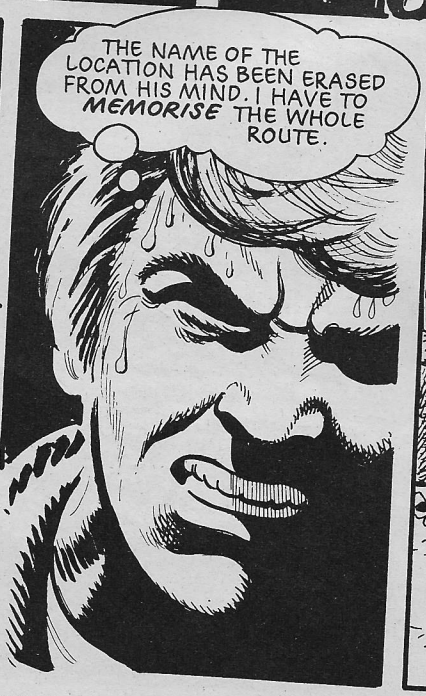
OFF YOU GO, MATE, AND I CAN NIP IN WHILE YOU'RE NOT LOOKIN'.
THE DELIVERY COMPLETE, THE DAZER PREPARES TO LEAVE...

IF ONLY WE COULD HAVE FOLLOWED THAT VAN AND KEPT WATCH HERE, JO.
SHE MUST HAVE GONE IN THE VAN. NOW I'LL HAVE TO FOLLOW HER. THIS CHANGES EVERYTHING.
JUST KEEP FACING THAT WAY, DON'T TURN ROUND!

SWIFTLY...
EUKK!!


RIGHT, NOW WE'LL JUST DO A LITTLE MIND PROBING AND FIND OUT WHERE THAT VAN WENT.

D LOCKS INTO THE DAZER'S BRAIN PATTERNS.


THE NAME OF THE LOCATION HAS BEEN ERASED FROM HIS MIND. I HAVE TO MEMORISE THE WHOLE ROUTE.

NOW TO FOLLOW THAT CRAZY KID — AND I THINK I KNOW HOW!
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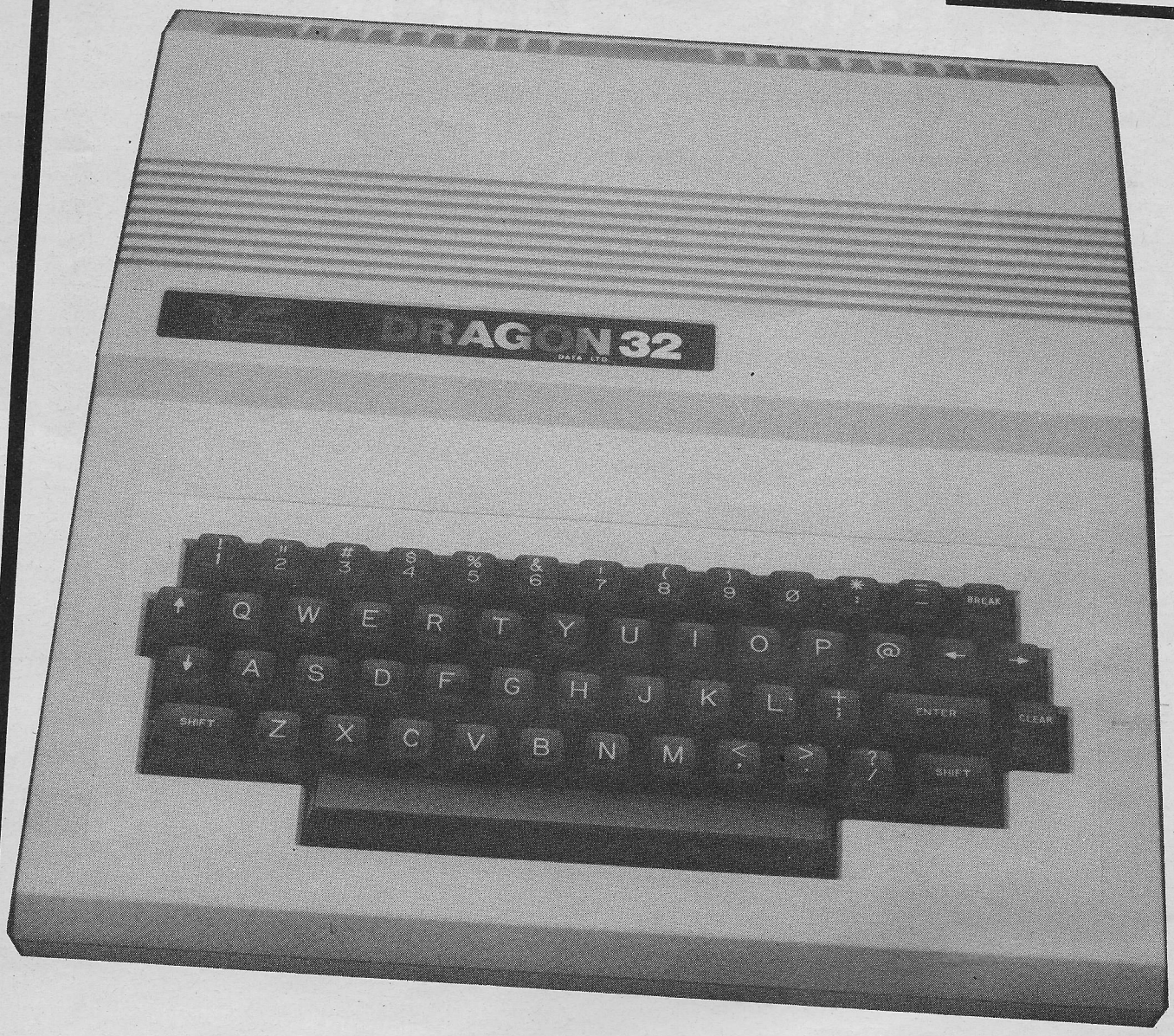
Dragon 32



Dragon Data Ltd,
Queensway,
Swansea SA5 4EH

Specifications

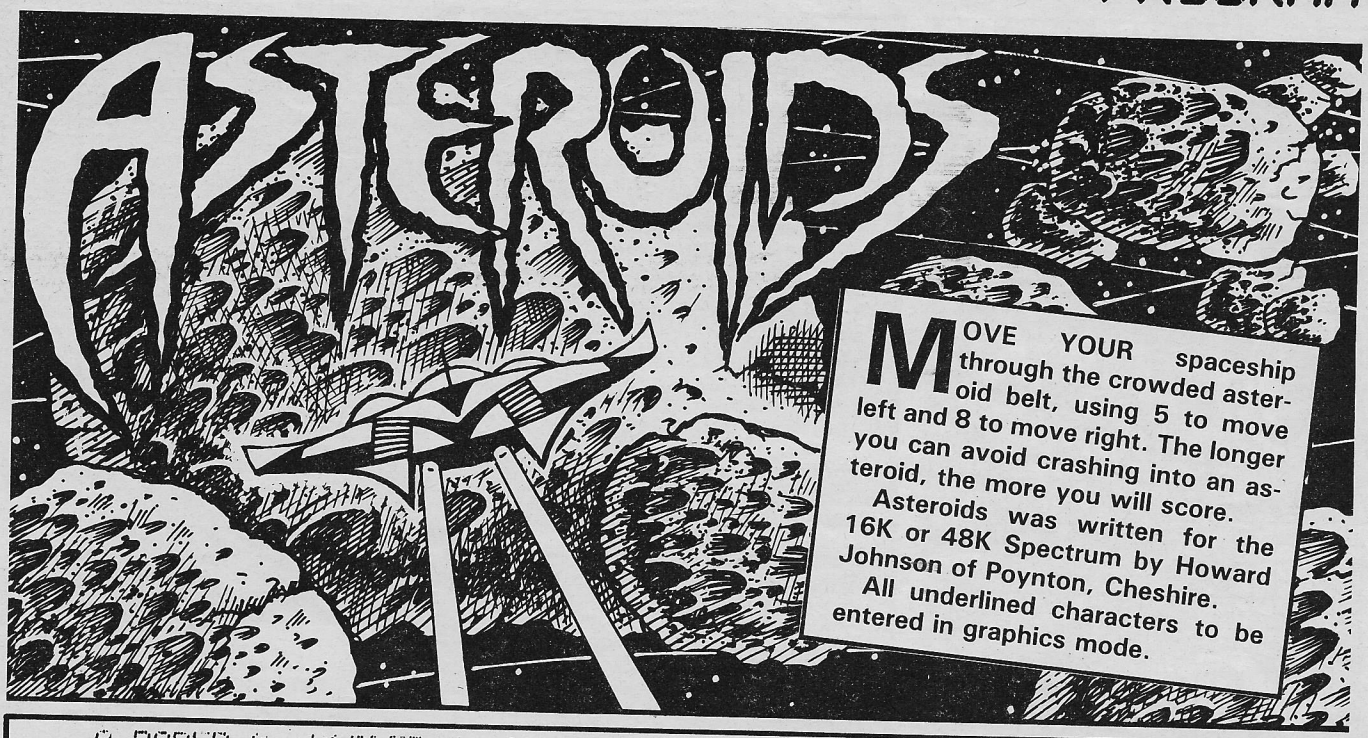
Price		£175
Numbers sold		100,000+
How sold		Assembled
Processor		6809
Standard RAM		32K
Expansion RAM		—
Basic + operating system		16K
Display	Colour	16 lines × 32 characters
Tape recorder		Any
Backing storage	Optional	Disc drives

Software

Microdeal, 14 Truro Road, St Austell, Cornwall, PL25 5JE.
Soft Joes Software, Business Centre, Claughton Road, Birkenhead, Merseyside.
Salamander Software, 17 Norfolk Road, Brighton BN1 4AA.

Comments

The Dragon has always been a popular computer, although the manual for the machine has been criticised strongly. Dragon Data plans to expand the machine with a new operating system and disc drives later this year. Little software has been produced for the Dragon and most of it which is available is from the United States or has links with the market there.

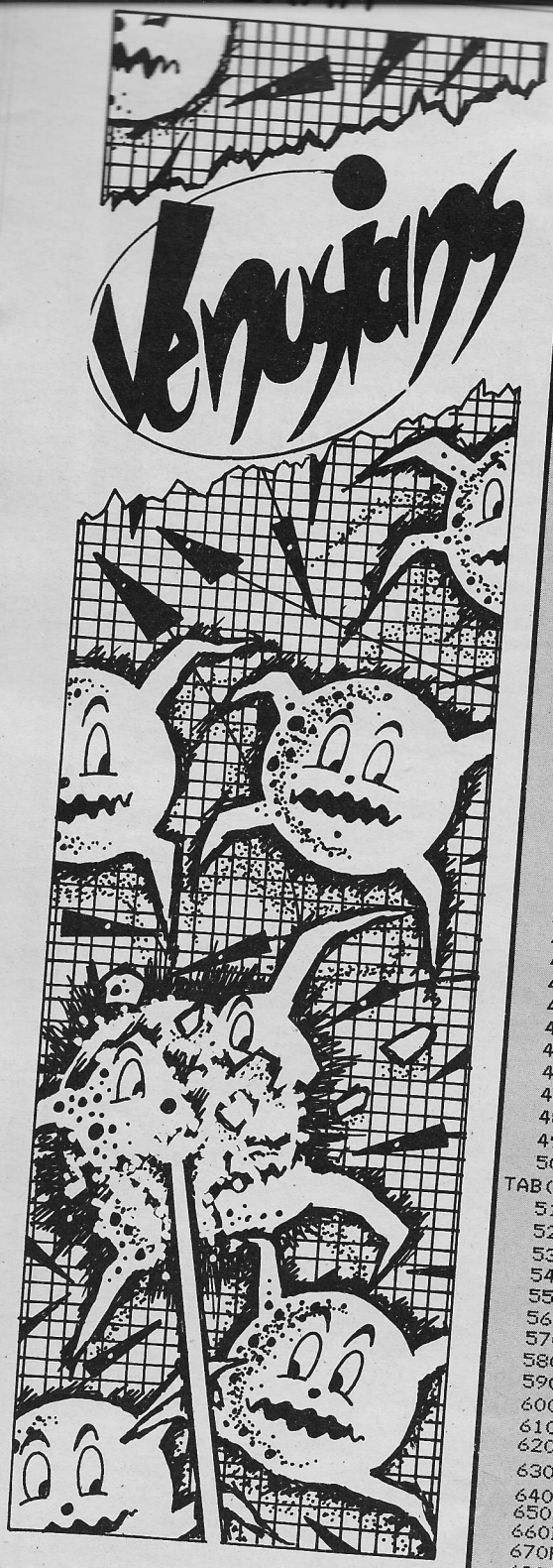

ASTEROIDS

MOVE YOUR spaceship through the crowded asteroid belt, using 5 to move left and 8 to move right. The longer you can avoid crashing into an asteroid, the more you will score.

Asteroids was written for the 16K or 48K Spectrum by Howard Johnson of Poynton, Cheshire.

All underlined characters to be entered in graphics mode.

```
   8 PAPER 0: BORDER 0: INK 6
   9 GO SUB 1000
  10 GO TO 6000
  20 LET a=INT (RND*30)
  30 PRINT AT 21,a; INK 4;"ab"
  40 LET x=x+(INKEY$="8")-(INKEY
$="5")+(x-2<1)-(x+2>30): BEEP .0
05,0: BEEP .002,40: LET sc=sc+1:
 BEEP .008,10
  60 POKE 23692,255: PRINT AT 21
,0''
  70 PRINT AT 8,x-1;"   ";AT 9,x
-2;"  ";AT 9,x+1;"  "
  80 PRINT AT 9,x; INK 6; BRIGHT
 0;"c";AT 10,x-1;"def"
  90 IF ATTR (11,x-1)=4 OR ATTR
(11,x)=4 OR ATTR (11,x+1)=4 THEN
 GO TO 2000
 140 GO TO 20
1000 CLS
1010 INK 6
1060 FOR f=-40 TO 60: BEEP .005,
f: NEXT f
1070 FOR f=60 TO -40 STEP -1: BE
EP .005,f: NEXT f
1080 PRINT '"     Press any key t
o continue": PAUSE 0
1090 RETURN
2000 PRINT AT 9,x-1;"***";AT 10,
x-1;"***": BEEP .8,20: BEEP .7,1
5
3000 CLS : PRINT AT 6,10;"You Cr
ashed"''"                Score=";sc:
IF sc>hi THEN LET hi=sc: PRINT '
"          Your name ?": INPUT n
$
3005 PRINT '"          Hi Score=";
hi;" By ": PRINT AT 14,15-(INT (
LEN n$)/2);n$
3010 PRINT '"          Another Ga
me ?"
3020 IF INKEY$="y" OR INKEY$="Y"
 THEN GO TO 7000
3030 IF INKEY$="n" OR INKEY$="N"
 THEN STOP
3040 GO TO 3020
4000 CLS : LET sc=0: LET x=15: I
NK 6: PAPER 0: BORDER 0: PRINT A
T 9,x; BRIGHT 0; INK 6;"c";AT 10
,x-1;"def"
4010 GO TO 20
6000 CLS : LET n$="": LET hi=0:
FOR f=0 TO 5: FOR g=0 TO 7: READ
 a: POKE USR CHR$ (144+f)+g,a: N
EXT g: NEXT f
7010 PRINT ''" The aim of this g
ame is to"'"dodge the oncoming a
teroids"'"by moving left or righ
t."
7020 PRINT '" This is your space
 ship :-"''"
                          c
                         def"
7030 PRINT ''"          Left - '
5'                     Right - '
8'"
7040 PRINT ''"    Press ENTER to
start game"
7050 BEEP .01,INT (RND*40)
7060 IF INKEY$<>CHR$ 13 THEN GO
TO 7050
7070 PAPER 0: BORDER 0: INK 6: C
LS
7080 GO TO 4000
9000 DATA 7,63,123,127,62,63,15,
9,224,252,222,255,255,247,250,24
0
9040 DATA 126,126,36,231,231,231
,231,255,3,7,12,24,48,48,96,240,
255,255,219,24,60,126,126,90,192
,224,48,24,12,12,6,15
```



VENUSIANS for the BBC Model B is a quick firing game which will stretch your nerves to the limit. Controlling a laser base at the bottom of the screen you must destroy the Venusians which zoom randomly towards you, using the left and right cursor keys to move and SHIFT to fire.

Difficult to beat, and with excellent graphics, Venusians was written by Sam Butchart, 12, of Warley, West Midlands.

```
>LIST
  10MODE 7:VDU 23;8202;0;0;0;
  20ON ERROR MODE7:END
  30PROCINSTRUCT
  40MODE 2:VDU 23;8202;0;0;0;
  50*FX 4,1
  60VDU 23,240,255,219,255,195,255,255,219,219
  70VDU 23,241,16,84,84,124,84,16,0,0
  80FOR s%=1 TO 25:VDU 18,0,2,25,69,RND(1279);RND(1023);:NEXT
  90SCORE=0:dead=FALSE:shot=FALSE
 100A=8:B=30:Z=2:X=RND(15)
 110ENVELOPE 2,1,-2,0,0,100,0,0,0,0,0,0,0,0
 120ENVELOPE1,2,0,0,0,0,0,0,0,9,0,-2,-2,120,80
 130ENVELOPE 3,129,2,4,6,28,14,7,0,0,0,-80,80,80
 140REPEAT
 150COLOUR  7
 160PRINT TAB(1,1)"SCORE ";SCORE
 170PROCship
 180IF shot=TRUE PROCfire
 190PROCwait(SKILL%-SCORE*2)
 200PROCalien
 210UNTIL dead=TRUE
 220MODE 7:*FX 4,0
 230VDU 23;11,0;0;0;0
 240PRINT TAB(5,8)"YOU SCORED ";CHR$129;CHR$136 SCORE
 250PRINT TAB(5,10)"ANOTHER GO (Y/N) ";
 260INPUT g$
 270IF LEFT$(g$,1)="Y" THEN CLEAR:RUN
 280CLS:END
 290DEF PROCship
 300COLOUR 2
 310PRINT TAB(A-1,B)CHR$32;TAB(A,B)CHR$241;TAB(A+1,B)CHR$32
 320IF INKEY(-26) AND A>1 A=A-1
 330IF INKEY(-122) AND A<16 A=A+1
 340IF INKEY(-1) THEN shot=TRUE
 350IF SKILL%=3 GOTO 370
 360w$=INKEY$(6)
 370ENDPROC
 380DEF PROCwait(wt%)
 390FOR wa%=1 TO wt%:NEXT
 400ENDPROC
 410DEF PROCalien
 420SOUND 2,-8,((SCORE+1)DIV4)MOD255,1
 430COLOUR4
 440PRINT TAB(X,Z-1)CHR$32;TAB(X,Z)CHR$240;TAB(X,Z+1)CHR$32
 450Z=Z+1:IF Z=30 PROCsound:dead=TRUE
 460ENDPROC
 470DEF PROCfire
 480SOUND 0,1,7,5:SOUND 1,2,20,9
 490COLOUR1
 500FOR f%=B-1 TO Z STEP-1:PRINT TAB(A,f%-1)" ";TAB(A,f%)"|";
TAB(A,f%+1)" ":NEXT:PRINT TAB(1,f%)STRING$(18,"  ")
 510 SOUND 1,-10,177,2
 520IF A=X PROChit
 530shot=FALSE
 540ENDPROC
 550DEF PROChit
 560SCORE=SCORE+10:SOUND 3,3,50,10
 570CLS:FOR s%=1 TO 25:VDU 18,0,2,25,69,RND(1279);RND(1023);:NEXT
 580Z=2:X=RND(15)
 590ENDPROC
 600DEF PROCsound
 610LOCAL x%
 620FOR x%=1 TO 20
 630SOUND 1,-12,30,1:SOUND 1,-12,100,1
 640NEXT x%
 650ENDPROC
 660DEF PROCINSTRUCT
 670PRINT CHR$141CHR$157CHR$129CHR$136"      VENUSIANS"
 680PRINT CHR$141CHR$157CHR$129CHR$136"      VENUSIANS"
 690PRINT
 700PRINT"You must stop the "
 710PRINT"Venusian invaders from "
 720PRINT"landing on Earth by destroying"
 730PRINT"them with your rapid fire"
 740PRINT"blast cannon."
 750PRINT
 760PRINT" The left and right cursor keys"
 770PRINT"move your fighter craft left and right."
 780PRINT"Press 'SHIFT'  to fire cannon."
 790PRINT''
 800PRINT" Enter skill level (1 to 3)"
 810INPUT "1 is the easiest "skill%
 820IF skill%<1 OR skill%>3 GOTO 790
 830ON skill% GOTO 840,850,860
 840SKILL%=300:GOTO 870
 850SKILL%=200:GOTO 870
 860SKILL%=100
 870PRINT:PRINT CHR$141" GOOD LUCK!";:PRINT CHR$141" GOOD LUCK!"
 880PRINT:PRINT" Press 'SPACE BAR'  to start"
 890REPEAT UNTIL GET=32
 900ENDPROC
```

```
 80 POKE788,194
 90 REM
100 POKE36878,15:POKE650,0:PRINT"■";CHR$(142);CHR$(8):OPEN1,0:POKE36879,26
110 DIMPH$(171),STT$(171),LC$(171),TW$(171),CN$(171),PC$(171)
120 DIMPPH$(171)
130 REM**OPTIION**
140 X$="■──────────────────────────":Z$="■       ■■DATA BASE■■       ■"
150 PRINT"■";X$;Z$;X$:PRINT"■■■■■F1:ENTER DATA":PRINT"■■■■■F2:VIEW"
160 PRINT"■■■■■F3:FIND":PRINT"■■■■■F4:HELP":PRINT"■■■■■F5:FILE IN"
170 PRINT"■■■■■F6:FILE OUT":PRINT"■■■■■F6:UP DATA"
180 GETA$:IFA$="■"THEN 260
190 IFA$="■"THEN370
200 IFA$="■"THEN490
210 IFA$="■"THEN600
220 IFA$="■"THEN890
230 IFA$="■"THEN810
240 IFA$="■"THEN970
250 GOTO180
260 REM**ENTER DATA**
270 FORN=0TO170:IFNA$(N)=""THEN290
280 NEXTN:GOTO130
290 PRINT"■■NAME:";:INPUT#1,NA$(N):PRINT:PRINTX$
300 PRINT"STREET:";:INPUT#1,STT$(N):PRINT:PRINTX$
310 PRINT"DISTRICT:";:INPUT#1,LC$(N):PRINT:PRINTX$
320 PRINT"TOWN:";:INPUT#1,TW$(N):PRINT:PRINTX$
330 PRINT"COUNTY:";INPUT#1,CN(N):PRINT:PRINTX$
340 PRINT"CODE:";INPUT#1,PC$(N):PRINT:PRINTX$
350 PRINT"PHONE:";INPUT#1,PH$(N):PRINT:PRINTX$
360 FORTM=0TTO1000:NEXTTM:GOTO130
370 REM**VIEW DATA**
380 FORN=0TO170:PRINT"■■NAME:";NA$(N):PRINTX$
390 PRINT"STREET:";STT$(N):PRINTX$
400 PRINT"DISTRICT:";LC$(N):PRINTX$
410 PRINT"TOWN:"TW$(N):PRINTX$
420 PRINT"COUNTY:";CN$(N):PRINTX$
430 PRINT"P.CODE:";PC$(N):PRINTX$
440 PRINT"PHONE:";PH$(N):PRINTX$
450 FORTM=0TO250
460 GETA$:IFA$="M"THEN130
470 IFNA$(N+1)=""THEN460
480 NEXTTM,N:GOTO130
490 REM**FIND**
500 PRINT"■■NAME:";:INPUT#1,NM$
510 FORN=0TO170:IFNA$(N)=NM$THEN530
520 NEXTN::GOTO760
530 PRINT"■■NAME:";NA$(N):PRINTX$:PRINT"STREET:";STT$(NN):PRINTX$
540 PRINT"DISTRICT:";LC$(N):PRINTX$:PRINT"TOWN:";TW$(N):PRINTX$
550 PRINT"COUNTY:";CN$(N):PRINTX$:PRINT"P.CODE:";PC$(N):PRINTX$
555 PRINT"PHONE:";PH$(N):PRINTX$
560 FOR0W=1TO500:NEXTOW
570 GETA$:IFA$="M"THEN130
580 IFFL=1TTHEN RETURN
590 GOTO570
600 REM**HELP**
610 PRINT"■■■■■■■■■■1:FIRST NAMES":PRINT"■■■■■2:SECOND NAMES"
620 PRINT"■■■■■";:INPUTA :ONA GOTO640,710
630 GOTO 610
640 REM**1ST NMS**
650 PRINT"■1ST NAMES:";:INPUT#1,NM$
660 A=LEN(NM$)
670 FORQ=0TO170:IFNM$=LEFT$(NA$(Q),A)THENFL=1:N=Q:GOSUB530
680 GETA$:IFA$="M"THEN 130
690 NEXT Q:IFFL=1 THENFL=0:GOTO130
700 FL=0:GOTO760
710 REM*2ND NMS**
720 PRINT"■2ND NAME:";:INPUT#1,NM$:A=LEN(NM$)
730 FORQ=0TO170:IFNM$=RIGTH$(NA$(Q),A) THENFL=1: GOTO530
740 GETA$:IFA$="M"THEN130
750 NEXTQ:IFFL=1 THENFL=0:GOTO130
760 REM**NON FOD**
770 PRINT"■■■■■■■■■■
```

HI ! I'M BRAINY and I really rate computers. I'm in Load Runner every issue so write to me at 196-200 Balls Pond Road, London N1 4AQ and I'll do my best to answer any questions you have.

Remember, Brainy's the name and, by the way, I will pay £1 to anyone whose name is mentioned. Write away!

BRAINY'S BRAINBOX

Spot the difference

WHAT IS the difference between a video games machine like the Atari and a computer like the Spectrum?

Stephen Toos, Newport Pagnell, Bucks.

THE ATARI home video centre is only for playing games. The Spectrum, however, being a computer, enables you to write your own programs and games. Tapes are less expensive and more of your friends are likely to have them, so you can exchange tapes with them. You can do all kinds of things with a computer which you could not even attempt with a video-games machine.

* * *

Micros—just another craze?

HOW CAN I convince my parents to let me buy a computer when they think it is just another electronic game of which I will soon grow tired? When and if my parents let me buy one, would you recommend the Commodore Vic-20 as a good all-round computer for playing arcade games and learning school subjects?

Stephen Dunne, Dublin.

YOU CAN assure your parents a computer is not just another electronic game, because you can use it educationally, such as for helping with revision, as well as for playing games and writing programs.

The Vic-20 is one of the top computers and has plenty of good software and books about it. It is also inexpensive but it has only a small memory and uses only capital letters. It is, however, a good, popular computer, with plenty of reasonably inexpensive games and learning software.

* * *

Talk about computer talk

MY DAD says computers are better than people. I told him that they cannot hear and speak but he said they could. That is not true, is it?

Lucy Martyn, Poole, Dorset.

YOUR FATHER is correct. You can buy special attachments for many computers which enable them to say certain words, usually with a strong American accent, and you can even get them for the Spectrum. The Apple and some bigger computers can be programmed to recognise certain words—usually up to about 100—spoken by certain people, so they can be said to hear and speak. They cannot see, though, if that is any consolation. And I think I prefer people.

Using GOTO statements

I HAVE easy access to a BBC Micro Model B and in my programs I often use the GOTO statement. In the *BBC Micro User Guide* it says that using the GOTO statement is bad practice and you should use a 'REPEAT...UNTIL' loop instead. Please could you tell me how to use a REPEAT...UNTIL loop instead of the GOTO statement?

Conor Quinn, Belfast.

YOU CANNOT replace all GOTOs with REPEAT...UNTIL loops but the ones you can occur when you have to type in the correct reply or answer. For instance, you might have this program:

```
20 INPUT reply
30 IF reply=5 THEN GOTO 50
40 GOTO 20
50 PRINT "Good!"
```

That is perfectly satisfactory but if you did that all over a big program, you would find it difficult to read the program and would have difficulties if something went wrong. Instead you could type:

```
20 REPEAT: INPUT reply
30 UNTIL reply=5
40 PRINT "Good!"
```

That is much easier to debug, alter and understand.

* * *

What is the TRS-80?

I HAVE seen a computer called the TRS-80. I have asked if it is a good computer but none of those I asked has heard of it. I wonder if you could tell me if it is worth buying?

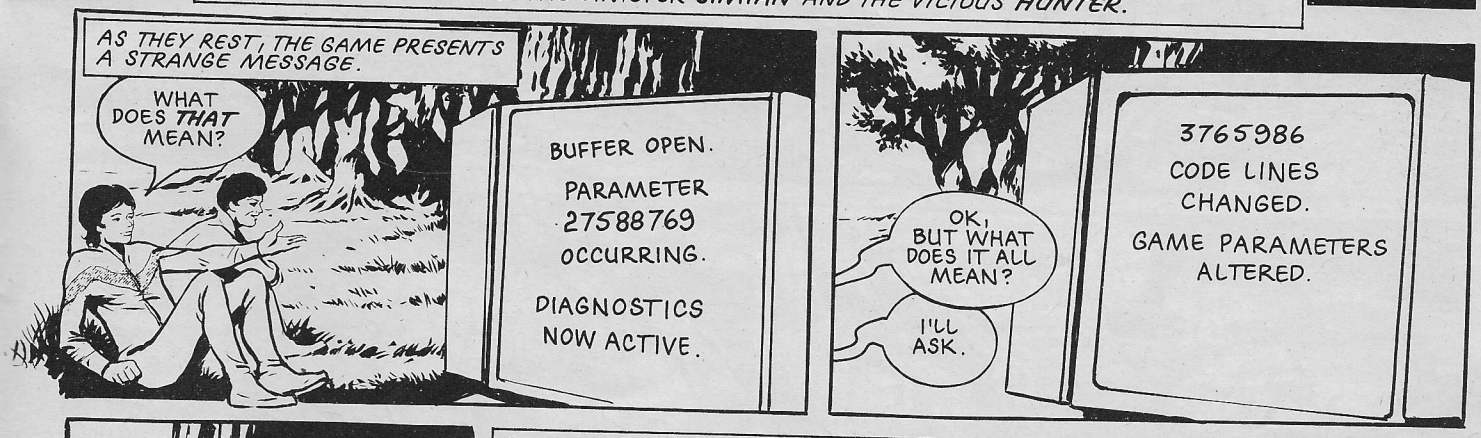
Shaun Gee, Shirecliffe, Sheffield.

THE OLD, black-and-white version of it has recently been replaced by the Tandy TRS-80 colour computer. It has fairly good Basic and a reasonable range of software for it. I think it can use the software for the old TRS-80, too.

It is expensive, about £240, but you could probably buy a much cheaper second-hand model by looking through advertisements in computer magazines. You should ask to try it in shops or at computer fairs before deciding to buy.

TRUMBUL'S WORLD

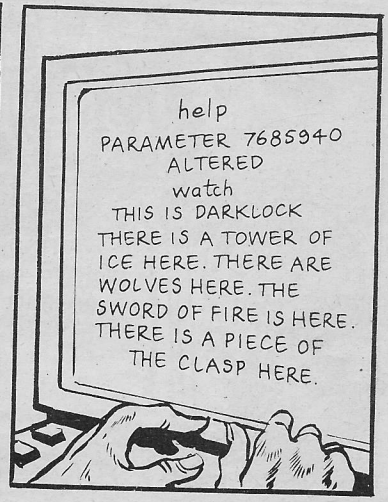
THE TWO CHILDREN OF PROGRAMMER **TRUMBULL** ARE SEARCHING THEIR FATHER'S **COMPUTER CREATED** ADVENTURE WORLD FOR THE MISSING FRAGMENTS OF A MYSTERIOUS **CLASP**. HARD ON THEIR HEELS ARE THE SINISTER **SIMIAN** AND THE VICIOUS **HUNTER**.

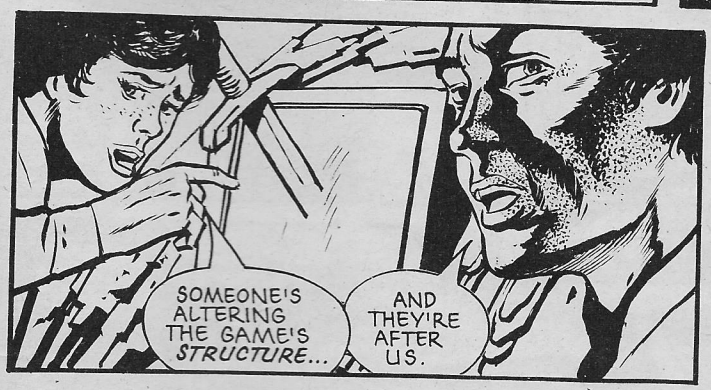


BEHIND, ON THE ISLAND, SIMIAN WORKS WITH TERRIBLE SPEED.
THERE, THE PATCH IS COMPLETE. NOW WE WILL SEE WHAT THEY SEE.
THERE THEY ARE! AND THE INSTRUCTIONS!
THERE IS A SMELL OF LILIES HERE. THERE IS A PIECE OF THE CLASP HERE.
THERE IS BEAUTY IN THEIR FATHER'S WORLD.
MY DISTORTER WILL CHANGE THAT... JUST A FEW SIMPLE ALTERATIONS.
THEY SCAMPER DOWN...
I'M SURE I CAN SMELL THOSE FLOWERS!
RACE YOU!
...DOWN...
DOWN INTO A SEA OF WOLVES AND A TOWER OF ICE!
SEE HOW MY POWER GROWS!!

LIKE DARK WATER, THE WOLVES SWIRL AROUND THE FOOT OF THE TOWER.

OH MY GOD...
EVERYTHING'S CHANGED!


help
PARAMETER 7685940 ALTERED
watch
THIS IS DARKLOCK
THERE IS A TOWER OF ICE HERE. THERE ARE WOLVES HERE. THE SWORD OF FIRE IS HERE. THERE IS A PIECE OF THE CLASP HERE.


SOMEONE'S ALTERING THE GAME'S STRUCTURE...
AND THEY'RE AFTER US.

MARC INSTRUCTS THE GAME AND MOVES INTO ACTION...
IF THAT'S THE WAY THEY WANT TO PLAY IT!
take sword
YOU TAKE THE SWORD OF FIRE.

FOLLOW ME!
NO... WAIT!

IT'S WORKING!

AT THE FOOT OF THE TOWER...
NOW LET'S GET UP THIS TOWER!

AND BACK AT THE BARROW.
PARAMETERS ALTERED... WAITING.
Summon bull
THE BULL COMES.
MARC GOUGES INTO THE TOWER.
JUST A FEW MORE INCHES...
A DARK SPECK IN A DARKENING SKY...
JAN, GET READY TO TAKE IT!
NOOO!!
A SCREAMING COMES OUT OF THE SKY...
MARC IS TAKEN!
...AND JAN IS LEFT.
OOWWW!!!
NEXT: THE HANDS OF THE HUNTER.

Duelling air aces

THE BATTLE rages over the fields of France. You are in your biplane and a German pilot is attacking you with machine-gun fire.

Dog Fight, for the Commodore 64, re-enacts one of those timeless duels of the First World War. It is not a visually-exciting re-enactment as little happens on the computer screen. There are two aircraft crossing the screen at odd angles firing machine-gun bursts but there is little to make it a game to appeal to the real arcade enthusiast.

The game is for two players and the computer acts only as a moderator, scoring every time you or your partner scores a hit. One player can use the game by setting one aircraft on a course and bombing it with the other.

The aircraft can be moved using two joysticks, or one joystick and the keyboard. That means one of the aircraft has to be controlled with a joystick all the time.

Despite the rough edges of the game the fast action, sprite graphics and the realistic sound effects provide some entertainment. Dog Fight can be obtained from Terminal Software and costs £9.95.

Fun, 6; addictive, 5; graphics, 7.

Jumping Jets!

THE FALKLANDS war gave a new lease of life to games concepts on popular microcomputers. The latest in this vein is Harrier Attack, which runs on the 16K Spectrum and Oric. The objective is to take off from your aircraft carrier, evade the strafing runs of the enemy aircraft which come to meet you and reach the island.

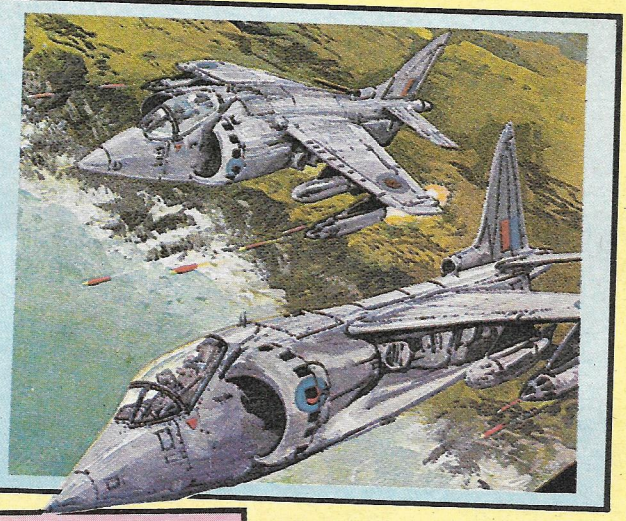
The Harriers being jump-jets, it means they can take-off vertically instead of the usual steady climb of most aircraft.

To get anywhere near the island calls for a good deal of persistence. When you start playing, the enemy attack quickly and your aircraft will either be destroyed by their cunning or in a collision with an attacker.

Both versions are surprisingly alike, although that for the Oric has the slight advantage of arcade-quality graphics.

Harrier Attack can be obtained from Durell Software and costs £6.95 for the Oric and £5.50 for the Spectrum.

Fun, 8; addictive, 8; graphics, 8.



Digger Dan

DIAMONDS is similar to the arcade game Dig Dug and introduces us to Digger Dan, a prospector mining for the Great White Diamond. Unfortunately for Dan, on the way to the diamond field he has upset some of the locals.

There are 16 levels in the game, each with four screens. The first level is fairly easy but as the game progresses the levels become almost impossible to complete. The aim is to collect the small clusters of diamonds scattered around the screen while being pursued by various menaces.

On the first four screens Dan must collect the diamonds while being chased by Brian the Blob, who can be crushed under the various rocks scattered around. Dan also has Philip the Filler, the Fireflies, Simon the Snake and the Eyes to contend with, and if he takes too long to clear a screen of diamonds the Demon appears and he doesn't need tunnels to pursue Dan.

Although there are 16 levels the only real variations are in the position of brick walls under the ground which make the collection of the diamonds more hazardous.

The first person to complete all 16 levels wins the Digger Dan Diamond Trophy but to attain that standard will take a good deal of skill as no extra lives are awarded for high scores.

Diamonds runs on an Atari 400/800 and is available from the English Software Co at a cost of £14.95.

Fun, 7; addictive, 7; graphics, 6.

Horrific adventure

RESCUING the princess from the castle of an evil magician or king is a standard plot for adventure games. The plot of Horror Castle, for the Dragon 32, is old and standard with more creaks in it than in the mouldy floors of the rascal's halls.

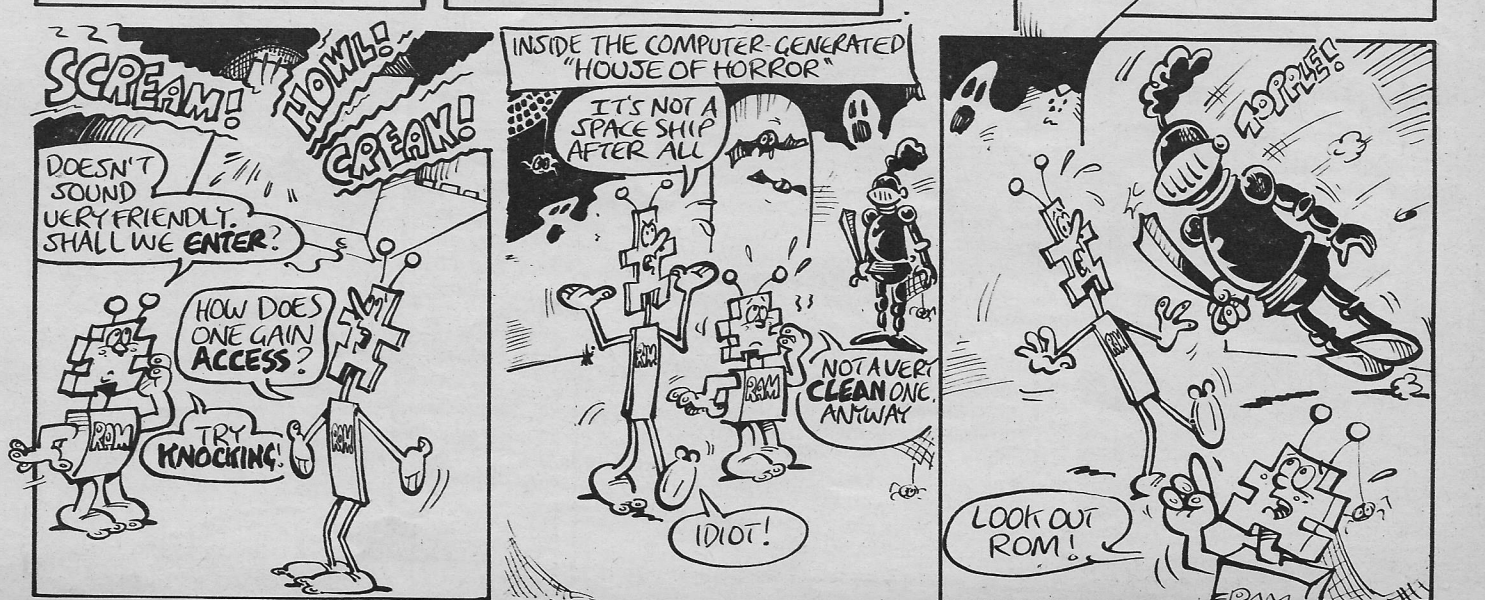
The game is machine-coded but it could just as well have been written in Dragon Basic for the extra speed and finish of the final product. The adventure was text only, with no graphics or even a bleep of a sound effect.

The manufacturer could surely have thought of a better plot, even if it still took place in a castle, and a little more care might have been put into realising the potential of this good machine.

Horror Castle can be obtained from A and F Software. It costs £11.

Fun, 3; addictive, 2; graphics, 1.

THE ADVENTURES OF ROM AND RAM



HAD A HEAVY KNIGHT?
VERY FUNNY!
AAARRGH!
HELP! HELP!
THOSE CHARACTERS LOOK FAMILIAR
I'M BORED WITH THIS GAME. LET'S LOOK AT ANOTHER MACHINE
SOMETHING TELLS ME IT'S TIME TO QUIT!
I'M RUNNING RIGHT BEHIND YOU, RAM!!!
SMASH!!
GREAT ZILLYKON! WHAT'S ALL THIS ABOUT?
IT'S GREEK TO ME... SOME KIND OF ALIEN LANGUAGE? I'LL MAKE A NOTE OF IT...
300N ERROR RUN
4-0Y=0:xme=0:var2=0:
Var4=0 why%=0
50MODE 7:?&FE00=10:
?&FE01=32
60PROC choice
70key1%=0
80PROC choice2
90MODES
COME ON!
MEANWHILE...
WAIT TILL I GET MY HANDS ON THOSE TWO LITTLE HOOLIGANS...
COME BACK HERE YOU VANDALS!
WE HAVEN'T DONE ANYTHING!
NO, BUT I THINK WE'RE GOING TO GET OUR KEYS PUNCHED!
IT'S ON THE CARDS! RUN FOR IT!
LATER
I WONDER HOW THAT COMPUTER SCREEN GOT BROKEN?!
WELL I SAID IT WAS A SMASHING GAME! TEE! HEE!
AT LEAST WE HAD TIME TO BUY THIS NEW GAME PROGRAM
ON THE DISTANT PLANET ZILLYKON...
ROM AND RAM ON LIVE. THEY'RE ASKING FOR RE-INFORCEMENTS AGAIN
ROM AND RAM? OH YES, THOSE TWO FOOLS I SENT TO SPY ON EARTH. TELL THEM I'M BUSY!
FOR SALE! SPACE SHIP
NEWS OF THE GALAXY
THIS IS EVEN BETTER THAN THE GAME AT THE COMPUTER FAIR
DO YOU THINK OUR ARMY WILL EVER ARRIVE???
MIGHT AS WELL ENTER INTO THE SPIRIT OF THIS, THEN...
NOT A GHOST OF A CHANCE
ANDY COBB.
ROM&RAM ARE ALWAYS A SCREAM, FOLLOW THEIR ADVENTURES IN THE NEXT ISSUE.

SCRAMBLE

BY 1980, the arcades were literally being invaded by dozens of new games, one of them Scramble by Stern Electronics. The game was popular from the beginning, because of its good graphics. Unlike most of its counterparts, it featured a scrolling landscape making the game seem more realistic.

Scramble was one of the first games to feature such things as fuel gauges and numerous alien terrains, making things slightly more complex for the novice player.

You control a spacecraft which can be made to move up and down or back and forth above the alien landscape which scrolls from right to left and is, of course, deadly to the touch. You must also keep a watchful eye on the fuel gauge at the bottom of the screen, which must be replenished by destroying the alien fuel dumps located at various positions along the planet's surface.

During the phase your craft is shot at by ground-to-air missiles and they can be destroyed by your machine-gun fire or bombs, which can be despatched two at a time. There are a number of alien bases dotted among the fuel dumps and they can be picked off for a mystery bonus.

The key to negotiating that part of the game is to manoeuvre close to the surface and shoot everything in your path. As you progress further into the system you are attacked by swarming UFOs and indestructible fireballs. To pass that section it is advisable to hug the surface and dodge the fireballs, keeping a watchful eye on your ever-decreasing fuel supply.

The game has six phases, including a mothership or base with which you must dock at the end of the system. In the event of a player achieving that, the game will restart on a slightly faster level. It takes a very skilled player to reach that standard.

Vic Skramble by Terminal Software is also a faithful version, with clear graphics for the 3.5K machine.

Ratings:

Airstrike	8
Gauntlet	8
Penetrator	9
Skramble	7

Software

THE ENGLISH Software Co produces the best version of Scramble for the Atari micros, called Airstrike and it is a very good copy of the arcade game.

Colourmatic markets a ZX-81 scramble, Gauntlet, for the 16K machine. That, too, features six phases and is another excellent copy.

Penetrator is the best scramble-type game for the 48K Spectrum and is from Melbourne House.

Providing processor power to The Controller in publishing Load Runner were Bill Scolding (editor), David Hogan (advertisement manager) and June Mortimer (administration). Chris Winch, Harold Mayes MBE, Terry Cartwright and Richard Hease linked into the system. The corporate might of ECC Publications of 196-200 Balls Pond Road, London N1 4AQ was utilised continually. Printout by Cradley Print PLC, Warley, West Midlands. Distributed by Spotlight Magazine Distribution Limited, 01-607 6411. ISSN 0264-8369. © 1983 Load Runner.